# The Builder.

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### *Perth, Western Australia.*

PERTH, both politically and commercially the capital city of West Australia, can only date its existence as a modern city back to the time of the discovery of the great inland goldfields about Coolgardie and Kalgoorlie. These lie from 350 to 400 miles inland to the east of Perth. The Colony received self-governing powers in 1890, but this did not affect the growth of the city to any marked degree. It was the inrush of foreign capital to develop the fields in about 1892 which brought in its train further capital seeking investments in other directions. Combined with the phenomenal influx of population, pouring in from all quarters, which had all practically to pass through Perth before distributing itself elsewhere, this regenerated the capital. It lifted it above its earlier provincial existence. A brief period of six or seven years has since sped, during which a new city, handsome and well ordered, has arisen on the north bank of the Swan River, about twelve miles from its mouth, where lies its port, Fremantle.

Few cities can boast of being more happily situated, as far as the picturesque is concerned. Southward over the Swan is a noble outlook of water and forest, which can be surpassed in natural beauty by few inland towns of any country. Every prospect pleases, and only the sand is vile, to paraphrase the old hymnologist. The West Coast of Western Australia, for many miles north and south, consists of a sandy tract extending back towards the Darling Ranges, lying about fifteen miles inland. Amidst this belt Perth is planted, and until a few years back most of its streets were in the native state of unmitigated sand. In the course of municipal progress strips of macadamised roadway were laid down in the centre of the street, with footpaths at the sides in the usual place, leaving sand strips intervening. Following at a later—a very much later—date came the completion of the road to the full width, a process still going on in the more outlying parts of the city.

It is only lately that any provision for surface drainage has been made. The rainy season, during the winter months, of say July, August, and September, is violent while it lasts. Six summer months may be practically said to be rainless. Large drains will be necessary for the rapid removal of storm water. During the transition stage of road formation, the sand strips on either side of the macadam served for drainage, where the storm water got itself away by disappearing. A similar casual method prevailed with house drainage; the sand swallowed up everything. The eye seeing not, so was the heart not afflicted; but the vengeance of the gods descended with the inflowing population. For some time there was much overcrowding, with the most rudimentary sanitary methods—or none—in vogue. Typhoid fever increased rapidly, and revelled in the rich pastures provided for it; the locality naturally got a bad reputation. Now, however, under the better prevailing conditions, after strenuous agitation has energised the municipal authorities, the health of the city has once more steadily improved. The ratio of typhoid to other diseases is now little, if any, higher than it should be.

Perth lies on the north bank of the Swan, which here, roughly speaking, runs east and west; then, taking a sharp bend north, it again forms the eastern boundary of the city. The north and west sides are not determined by any natural features. The city lies on a high terrace overlooking the river, which originally came up to the foot of the terrace. A large area of land has been reclaimed from the shallow waters, principally by dredging channels; the greater portion of this reclamation has been reserved for recreation grounds. Still more reclamation is reserved for the future.

The streets of the city, which is laid out regularly, run approximately north, south, east, and west. The finest of these, St. George's-terrace, with its continuation, Adelaide-terrace, run east and west at nearly the top of the terrace. St George's-terrace would rank as a handsome thoroughfare anywhere. It is broad, well laid out, quite a boulevard, with trees, principally Cape lilacs, on either side. Adelaide-terrace, a continuation to the eastward, and similar, is purely a residential locality, where many of the best private houses and gardens, on one side of the street overlooking the river, may be found.

Government House lies ensconced in trees, with its garden and grounds, off St. George's-terrace; on the river side are the prettily-laid-out Public Gardens. Opposite these two are the Anglican Cathedral, standing on an elevation but rather shut in, and the Post Office, which forms part of a large block of civil service, to be referred to later on. Westward is the business portion of St. George's-terrace, where all the banks, insurance offices, together with other large commercial undertakings, are to be found. On either side the street, not a few handsome and dignified fronts may be seen, principally designed in a free classical style. Lately a fine block of offices, called "Moir's Chambers," had been completed at the corner of the terrace and Barrack-street, one of the principal streets running north. It is built in red brick, the sky-line broken by gables, and handsome chimney-stacks rising from a deep-pitched green slate roof. The Bank of New South Wales has also recently been housed in a worthy manner. The front of the building is principally pressed red bricks imported from Melbourne. All the leading banks have been forced to greatly enlarge their premises to provide for increase of business. From the business portion St. George's-terrace ascends gradually westward, and ends in a steep incline at the so-called "Barracks." This is an old landmark reminiscent of the Crown Colony days. It is an old red-brick building of a military cut, three stories high, occupying a fine site, commanding as it

does an extensive view of the river terrace, and a large portion of the city eastward. It is proposed to demolish these old buildings to erect on their site the new Houses of Legislature. No finer or fitter site could be obtained for the like purpose, and the edifice would both give and receive effect in the position. The west end of the terrace *is* the "West-end." It is one of the best residential quarters, where some very good private houses, lately erected, are set off by good gardens.

To finish with this end of the town, the Park and Observatory may be alluded to. The latter lies on the edge of the Park at an altitude of about 190 ft. above sea-level; the position, it may interest some readers to know, is long. 150 deg., 52 min. E., lat. 31 deg., 37 min. S. The Observatory has a most modern equipment under the charge of a very capable astronomer. Some of the refinements are not to be found in any other observatory. The Perth Park, forming part of the western bounds of the city, is a noble reserve of nearly 1,000 acres, in which the natural bush and the wild flowers have been preserved. It occupies the most elevated position in the neighbourhood. A fine winding drive has been laid out along the edge of the cliff a couple of hundred feet high, along the foot of which flow the deep waters of the Swan. From a promontory on this cliff a very extended prospect is obtained. The eye roves over the lake-like expanses of the river, called Perth Water and Melville Water, with their bush-clad slopes. Beyond, over the intervening bush landscape, are to be seen in the distance the blue ridges and purple slopes of the Darling Ranges, which form the background to a lovely picture.

Coming back to the centre of the town, the principal business street is Hay-street, running parallel to St. George's-terrace and north of it. This is the longest but not the widest thoroughfare in the city. Originally of the same width as others, by a most short-sighted blunder and want of prevision, it was deliberately reduced in width to save expenditure in formation and upkeep in the penurious days of the city's finances. This was accomplished by allowing owners to encroach on the street and push forward the line of frontage. Now the street is too narrow really to comfortably permit of the growing traffic, in addition to the double line of electric trams which have lately been established. The roadway for above a distance of half a mile, in the busy central portion of its length, has at the same time as putting down the permanent-way of the tram line, been laid with Jarrah wood-blocking for its full width. The tramway itself has been very solidly laid down. In this portion of Hay-street good and substantial shops and stores of all descriptions have taken the place of the old-style wooden structures.

The Town Hall and Municipal Offices occupy one corner of the intersection of Hay-street and Barrack-street, beforementioned as being the principal north and south thoroughfares. At the angle, and seen from four directions, rises a lofty square clock-tower and spire. The upper story is emphasised by circular angle turrets. The outlines of the tower, from a distance, are by no means bad, but the details are of the poorest, which is not to be wondered at, as the building was erected by convict labour long since. The interior arrangement and accommodation has become quite unsuited to the present needs of the Corporation, consequently a proposal is on foot to sell the site to the Government, who require the space for the extension of the public service offices. The City will then build elsewhere.

Brick is the principal building material used about the city, but the quality is poor. Formerly a pale red brick was produced, running to almost yellow, and a great fashion came in at one time of picking the lighter colour for headers. The wall was built in Flemish bond with the yellowish headers used all through. It does not seem to have occurred to the designers to carry the effect further by any variations in bonds or diapers. The "streaky bacon" style does not reach this far off shore. The old brick was rough, but fair in quality; during the late period of extreme activity a very inferior article has been made use of, as bricks could not be turned out fast enough; they were broken out of the kiln as soon as cool enough to handle. By means of much pointing, staining, and tuck pointing a fair exterior was presented. Repentance will come later. Most of the ornamental features in the newer buildings are moulded in cement, with applied ornament in pressed cement; these features are coloured yellow or cream-colour to represent stone. Some of this moulded work is not without merit. Mason's work is very expensive, and no good local stone easily worked for ornamental features is conveniently to be found. For rubble walling there is an ample supply of a rough limestone, and also a sandstone found close together. Some attempt has been made to work these up for effect; but such old stone buildings as exist show that both the lime and sandstone have weathered badly and become honeycombed. They are not homogeneous in quality all through. The Darling Ranges contain limitless quantities of a grey granite, and a hard blue stone which is used for road metal.

The local branch of the Royal Mint has been established some distance down Hay-street. It is a large block, solid and substantial in design, containing, besides offices, residences for the Deputy Master and the Superintendent. The cost has been about 45,000*l*. The material is principally carried out in a cream-coloured sandstone, and roofed with red French tiles, a good many of which are used locally, and make a good roof. The chimney-tops finish with tiled gable roofs, some exits are provided at the sides. The result is rather North Italian in effect.

One of the principal undertakings of the Government has been to house the Public Library and part of the Museum under one roof. Half the building has been erected at a cost of about 20,000*l*. The ground floor is partly sunk below the ground level. Local Meekering granite has been used for this story, and for the semicircular-arched open colonnade which is carried along the front at the first-floor level. A dull red brick is the material in which the building is carried out, with a high-pitched roof of green slate. The centre portion, containing the entrance and staircases, is thrown forward, and finished with a gable. The library proper is installed on the first floor, and is approached by a broad external flight of steps. It is for reference purposes only, and contains a very well-selected stock numbering about 20,000 volumes. It is arranged on the alcove system. The top floor is assigned to the museum, which has other galleries at the rear of the building.

The railway station, for the size of the city, is a large and roomy building, with an arcaded front. The administrative department of the railways is housed here in the upper story, to which a third can be added if required, as the building has been built with a view to future needs.

The Public Services are housed principally in a large block of offices, built at different periods, facing, as before mentioned, St. George's-terrace, Hay-street, and Barrack-street. There is also a long frontage on a lane connecting Hay-street and the terrace on the east side of the block. The west end of the cathedral also faces this lane. These buildings show different designs, though all are of a modified Classic type. The St. George's-terrace façade, the oldest portion, principally devoted to the Postal and Telegraph Departments, is a neat, quiet design of somewhat French Renaissance feeling, which is helped by a high-pitched slate roof, pierced by lucarnes. The long eastern façade is broken up by two designs more Classical in idea. The newest northern portion, which returns along Hay-street, will be further extended if the Town Hall is taken over by the Government. This portion is a lofty three-storied building in red brick, with largely projecting eaves above a Florentine cornice. The effect in this portion is gained by rather a doubtful expedient of meaningless ornament. A Classical colonnade of two superimposed orders is carried all along the front at the first and second floor levels. This is built out on iron cantilevers cased in concrete, and finished as moulded trusses. The columns themselves are composed of a skeleton iron framework enclosed in cement, with cement Corinthian caps and cornice. It must be admitted that this appendage has a bold effect. The architect responsible for all works here and scattered over the Colony, lately erected by the Government, is Mr. Grainger.

Coming to the churches, it may be said that the principal religious bodies have good and commodious edifices. Nearly all those of the Dissenting bodies are disfigured with large galleries. The Anglican Cathedral is a large, plain, red-brick building of simple Gothic design, having a light flèche over the crossing. The interior is plain and cold, the red-brick work rough and untouched. Three lofty lancet windows, filled with indifferent stained glass, occupy the east end. The church is fairly lofty, and has a dark open timber roof. The Catholics have undoubtedly obtained the finest site in the city proper for a great fane. The emplacement was originally a public square in one of the highest situations, through which ran one of the main thoroughfares —Murray-street. The authorities offered the site first to the Anglicans, who refused it, and then to the Roman

Catholics, who, with their usual perspicacity, accepted the splendid gift. Their present edifice is an old, gaunt, weather-stained building, which might stand in a foreign village. The only redeeming picturesque feature is an old square tower, in one of the open arches of which, in the upper story, hangs the bell. In the neighbourhood the same religious body gradually acquired a large amount of land, on which stand various institutions connected with their religion, such as the Bishop's palace, school, convent, orphanage, etc. Those buildings, lately erected, are of a very good stamp.

The hospital, standing near the Roman Catholic Cathedral, calls for mention, as lately two extended additions have been made to it—the administrative block, and a large two-storied ward, each floor containing twenty-eight beds, the lower being a surgical ward. A well-appointed operating theatre is part of the addition. These two blocks have cost respectively about 9,000*l.* and 13,000*l.* The total accommodation of the hospital is 196 beds, which number, however, can be raised to fifty more by using temporary buildings in time of epidemic.

An extensive addition has been made to Government House to provide for large receptions and functions. The old building was erected some time back in a nondescript Tudor style. This was in the days of the Crown Colony, when it was less important than now, and the accommodation had become cramped. Large dining and billiard rooms, together with a ball and supper rooms, their necessary subsidiary apartments, have been added. The ballroom, one of the largest in the Colonies, is novel in idea. The dancing floor is surrounded by an open arcade connecting it with crush spaces beyond, so that the floor is kept free for the dancers. A musicians' gallery projects over a portion of one side. The ceiling of the ballroom is elliptical in shape, broken up into bays by flat surface mouldings and ornament.

The water supply of Perth is under the control of an independent board nominated by the Government; the Mayor of Perth, by virtue of his office, is also a member of this body. The service was instituted by a private company, which was bought out by the Government in 1896 for 220,000*l.* The City Council wished to obtain control of the supply, but could not make satisfactory arrangements with the Government as regards the loan account. Water also had been supplied outside the city limits to districts whose interests had to be safeguarded. The storage reservoir lies in the Darling Ranges, seventeen miles from the city. This reservoir is 500 ft. above sea level, and has a capacity of 240 millions of gallons. The average rainfall is about 37 in. of the catchment area, which embraces 10,000 acres of hill country. As remarked before, the rain falls almost entirely during the short winter, six months of the year being quite rainless. Adjacent to this area is that reserved to the great Coolgardie water supply scheme The water is brought into Perth by a 21-in. main, lately doubled, to the distributing reservoir on Mount Eliza, in the Perth Park, before referred to. This is about 200 ft. above sea level. Owing to rapidly-increasing demands the power of supply is taxed, and has been augmented by the flow from two large artesian bores, which has been turned into the main.

The present demand in summer is about a million gallons daily. The distributing reservoir has a capacity of 750,000 gallons. An enlargement is in course of construction, which will raise the holding up to 2,000,000 gallons. To this a filtration and aeration process will shortly be added to improve the quality of the supply. Experiments have been carried out with various filter cloths; one, a variety used in sugar refineries, has given very encouraging results. A peculiarity of the water obtained in the hills is the presence of free ammonia in it. In the deep bores about Perth it is observed in a more marked degree. These bores go down to a depth of over 800 ft. The phenomenon is not yet satisfactorily accounted for. An explanation put forward to account for the condition of the water of the bores is that in these deep strata the water is impregnated with nitrates, which, acting chemically on the iron pipes, set free ammonia.

The Coolgardie water supply scheme, of which most engineers will have heard, can only be briefly referred to in outline. Water is to be conveyed in iron pipes laid on the surface of the ground to convey water to the goldfields at Kalgoorlie and Coolgardie, 350 to 400 miles inland to the east. No fresh water can be found in those districts, and all the salt underground water has to be condensed for use. In the Darling Ranges a great dam is to be erected to store the water of the Helena River at Mundaring. The country rises steadily inland, necessitating the use of pumping stations. Of these there will be eight (two being in the vicinity of the dam) to lift the water to the highest point in the hills. Thence it will flow by gravity for some distance, when the pumping will recommence. The average lift of the pumps will be about 340 ft., and at each station the machinery will be in duplicate. The particular point of novelty, however, may be said to lie in the pipes to be used, which will be of various sizes up to 31 in. in diameter, and capable of resisting great pressure. Five million gallons a day are to be delivered at Coolgardie. The pipe decided on is the invention of Mr. Mepham Fergusson, of Melbourne, who is the contractor of half the supply of the pipes. Much time and thought has been expended in perfecting this pipe. Shortly, the process is as follows:—Flat sheets of steel, after the edges are planed and trimmed to exact dimensions, pass under heavy rollers, and are bent into semi-circular forms lengthwise of the sheet of metal. The planed edges are then inserted in the grooves of steel "locking bars," exactly the same length as the sheets. Under immense hydraulic pressure the bars are clenched on to the edges of the curved sheets. To increase the strength of the joint a slight dove-tail shape is given to it. The tests undergone have proved this joint to be equal to any possible strain likely to be incurred. The germ of the idea may be said to be very old, as it can be seen in the grooved lead cames used for quarry glazing. It is very improbable that the inventor, however, ever saw this. The joint runs lengthways of the pipe.

No system of sewage has yet been carried out of Perth. The movable plan method is in vogue, and though this was very badly and imperfectly organised some time ago, the system has been much improved. It is also more efficiently carried out, and greater attention paid to cleanliness. The pans are cleansed by steam, and disinfected before reusing them.

An elaborate scheme of sewage was prepared some little time ago by Mr. Napier Bell, an engineer whose name is well known throughout these Colonies. This plan embraced two alternatives. The main extended idea included Perth and its suburbs, with the districts adjacent to the course of the main outfall, which was to be taken to the ocean. This idea embraced Fremantle also, which is distant about twelve miles from Perth.

A modified plan restricted the scheme to Perth and its suburbs, with a sewage farm to utilise and deal with the matter. This is the only way of dealing with the products practically, as it has been rightly decided that the river shall not be used as a carrier and polluted. The Swan, with its bays and coves, is the great holiday resort for the townsfolk; its shores are a bright, clean sand, which ought not to be submitted to any deteriorating influences. The farm would have to be established on the far side of the river from the town, where the nearest suitable land is to be found. The sewage would, therefore, necessarily have to be carried through a siphon lying on the bottom of the river, which is about haif a mile wide, though very shallow; or as an alternative the pipes would be slung underneath the "Causeway," as the bridge crossing the river here is called. The natural conformation of the ground in the neighbourhood of Perth will always cause difficulties in sewering. Deep depressions, quite unconnected with each other, are scattered about, and there is no well-defined fall in any one direction. A large amount of deep tunnelling, and expensive sewer construction, would be entailed. Elaborate contour surveys have been made in connexion with the extended scheme. Up to the present no move has been made in the direction of carrying out either or any scheme, nor is it probable that anything will be undertaken in the immediate future, as it will entail further borrowing.

## NOTES.

**Birthday Honours.** As usual, art receives little attention in the Birthday Honours list. A knighthood to Mr. August Manns is a well deserved recognition of his long services to music in this country. A similar honour to Mr. Charles Holroyd, the keeper of the Tate Gallery, will be recognised as suitable. Among the architectural profession the only name is that of Mr. David Ewart, the chief architect to the Public Works Department of Canada, who receives a Companionship in the Imperial Service Order. Of English architects apparently none are considered worth taking into account for public honours. It is curious to contrast with this the regular way in which architects in France are decorated on official anniversaries.

**Street Traffic Commission.** At the first meeting of this Commission, after the return of the Sub-commission from the United States, Mr. Riley, the architect of the London County Council, propounded an ideal scheme for London traffic. It is comparatively easy to evolve plans of this character, but principally impossible to secure their complete realisation. Mr. Riley suggested circumferential railway lines at various distances apart, and radial lines joining the circumferential lines with each other and with points near the centre of the county; the existing and authorised electrical systems to be modified so as to bring them into approximate unification. Further, he proposed broad avenues converging towards the central areas of the county, providing for underground as well as for surface locomotion. Something might certainly be done in the directions indicated. For instance, with the aid of suitable legislation all future deep-level subways could be constructed along circumferential routes instead of having to follow the devious lines of existing thoroughfares as at present. And the preparation of a complete prospective plan of electric railways by a central technical board would be of great use for guiding the energy of promoters in proper directions, especially if it were understood that no new lines would be permitted unless conforming with the general plan. Mr. Riley was quite right in emphasising the noticeable lack of communications between north and south, and his scheme for linking up the various railway termini is one that is well worth serious consideration. The broad avenues suggested are also desirable, and if they can be formed through comparatively inexpensive property their construction would certainly be justifiable.

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**The Spoliation of Clifton.** We deeply regret to hear that the beauty of Clifton, or of one portion of it, is in danger of being permanently destroyed through the prosecution of quarrying operations on a large scale in Leigh Woods, on the Somersetshire side of the Avon. There is not in England a more beautiful and romantic scene than that from the high down near the head of the suspension bridge, looking across the river and the gorge to Leigh Woods, with the distant city of Bristol in the low ground on the left. Leigh Woods have been almost proverbial for beauty for generations; those who would know how the whole scene about there affected the feelings of a man of culture and imagination may gain some idea of this from the late Mr. Addington Symonds's impassioned chapter on Clifton in the volume of Essays under the title—"In the Key of Blue." To those who know and love Clifton the idea of Leigh Woods being destroyed for quarrying seems really almost a kind of blasphemy. Can people quarry stone nowhere but in the most beautiful corners of England? We understand that a committee has been formed of Bristol people to try to arrest this destruction; we hope they may succeed.

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**The Old Bridge, Ayr.** It appears that the "Auld Brig of Ayr," as it is known in the northern tongue, is in rather imminent danger, not of the usual kind, resulting from a desire on the part of local authorities to remove and rebuild an ancient structure, but from the mere neglect of the authorities to keep it in proper repair. Mr. James A. Morris, a Fellow of the Institute, practising in Ayr, has done what he could to press upon the municipality the necessity of doing something without delay, unless they want the bridge to fall to pieces, and it seems that their own Burgh Surveyor has more than once reported on the subject, but no action has been taken. Mr Morris, in a letter to us, states that the bridge "is believed to date from the thirteenth century"; that may be the case with part of the masonry of the piers, but certainly not, as far as one can judge by a photograph, with the arches, which are not thirteenth century arches. However, it is a most interesting old bridge, not only in itself as a structural monument, but also as figuring in Burns's poem, "The Twa Brigs of Ayr." We may congratulate the Ayr municipality on not proposing to pull it down, according to the usual course of municipal authorities; but if they let it down, the result will be as bad.

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**The Glasgow Fire.** The fire which broke out last week in Buchanan-street, Glasgow, serves to demonstrate the advantages of fire-resisting construction, and at the same time to make clear one or two weak points in connexion with the design and equipment of the buildings attacked. It appears that the fire originated in the third story of a warehouse occupied by a firm of wholesale milliners. Breaking through the windows at the sides, the flames crossed a narrow lane and ignited the contents of another warehouse stocked with woollen goods. We do not gather from published reports that either establishment was equipped with automatic sprinklers, which are certainly necessary details in the equipment of every building in which inflammable goods are kept. If such appliances had been provided it is highly probable that the fire would have been extinguished without any great damage, and it is tolerably certain that the use of fire-resisting window shutters and external sprinklers would have prevented the spread of the fire to the second building affected. As it was, the fire brigade were unable to check the flames, or to give any attention to saving the buildings until their contents had been reduced to ashes. Here again we find evidence that proper means of isolating the different floors were not provided, or if provided were not used. It is satisfactory to find that with the exception of a tower, supported by unprotected steel members, the framework of the first building was not destroyed. As for the tower, the supporting girders became red-hot, and yielded to the superimposed weight, the collapse fortunately causing no serious damage. The use of unprotected steel ought certainly to be prohibited in all future building construction in large cities, and it is clear that building regulations should compel the application of the most modern methods of resisting fire to all premises containing readily inflammable articles.

**Drains v. Sewers.** The principle adopted by the Legislature of defining the word "drain" for the purposes of the Public Health Act, and their defining the word "sewer" as including everything not a drain, has again led to legislation, carried to the Court of Appeal in the case of Wilkinson *v.* Llandaff and Dinas Powis Rural District Council (*Times*, November 9th). The channel in question was an open one at the side of the road, and it carried off the rain-water from several houses and the surface from three curtilages. In the channel were gratings carrying off the water into a deeper underground sewer or drain. Some foul matter had got into the channel, and the plaintiff sued for an injunction restraining the defendants from permitting it to remain there, and also for damages on account of the illness of a child. The plaintiff was successful on both heads, and the judgment has now been affirmed by the Court of Appeal. The Court held that the fact that there was no clearly-defined edge to the channel near the road made no difference, the fact that it took the surface water from the road and also the rain-water from the roofs of several houses constituting it not a drain, which must be used for the "drainage of one building only or premises within the same curtilage." The case of an agricultural drain carrying off surface water from different premises was, however, left open by the Court.

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**Lights on Motor Cars.** Now the evenings are drawing in public attention is being increasingly directed to the lights carried by motor-cars, which are causing serious risk to other traffic on the roads. Horses which are perfectly trained to pass motor-cars in the daylight will not face the terrible bright lights which are now exhibited on some cars. Frequently four-lights of intense brilliancy are exhibited in the front of cars, being either electric or acetylene, and on dark country roads the sudden and rapid appearance of lights of such intensity is almost as startling to drivers as to their horses, and there is this further disadvantage that the eyes of all persons meeting the cars are so blinded by the glare that they cannot see objects in the road after the cars have passed, and considerable danger is incurred from other vehicles following the cars closely. This subject calls for immediate attention on the part of the Local Government Board, and the lights carried by many bicycles also give rise to similar inconvenience, and require regulations.

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**"Time" under Statutory Powers.** A decision of the Court of Appeal, given on October 29 in the case of Goldsmiths' Company *v.* West Metropolitan Railway Company, is of importance to those exercising compulsory powers under statute. The statute under which the defendant company acted contained a provision that "the powers of the company for the compulsory purchase of lands shall cease after the expiration of three years from the passing of this Act." The Act received the Royal Assent on August 9, 1899, and the notice of the company to treat for the purchase of certain lands was served on the plaintiffs on August 9, 1902. The

plaintiffs contended that since August 9, 1899, the day on which the Royal Assent was given, was to be reckoned in the time, the defendants' compulsory powers ceased on August 8, 1902; but the Court of Appeal have held, affirming the Court below, that the portion of a day was not to be computed, and that the time commenced to run from midnight after the Royal Assent was given, and hence that the notice was in time.

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**Society of Portrait Painters.**

The exhibition of the Society of Portrait Painters at the New Gallery is a rather mixed one, and owes its attractions mainly to the works of a few eminent artists, several of them deceased, but who we presume were members during life. Thus the first central position on the wall of the west gallery is occupied by a full-length portrait, or rather the artistic treatment of a costume, by Whistler, which is stated to be "unfinished," but is more finished than many of his pictures which have been exhibited. It is called "Rouge et Noir" (4), and is, as the title implies, a study in black and red, very fine as such; but, as in others of his portraits, the face is the least interesting portion of the work and the one which seems of least importance. Mr. Orchardson occupies a very large space in the same room, with a fine set of paintings most of which, we think, are not new or painted for this exhibition, unless the half-length of "the late Marquess of Lothian" (22) may be; we do not remember it; it is a very fine work, as remarkable for its vigorous human character as a portrait; as for its fine effect of colour in this how different from the Whistler opposite, which has hardly human character at all. It is seldom that we find the balance between portraiture and pictorial effect so well kept as in this portrait of Mr. Orchardson's. Mr. Watts's "Mrs. Robert Crawshay" (3), a bust portrait in which a quantity of flowers are introduced, is beautiful as a piece of colour, but at once gives the impression that the face is not really a likeness; it is merely an idealised type. Mr Jack's charming picture of a lady seated in the open air, called a "Portrait Study" (12), has the appearance of an oil painting executed with the lightness and brightness of touch of a water-colour; there is a distinctive style about this. Among portraits which are simply portraits—presentations of a living subject with more or less intensity of likeness and expression, Mr. Collier's "Richard Gunstone" (30) is excellent, and so in a less degree is Mr. Riviere's "Sir Henry Cotton." Mr. Henry J Hudson's pictures in the north gallery are interesting for individuality of style and colour effect, especially "The Fortune-teller" (51). In the same room are M. Besnard's portrait of "Madame Besnard" (40) with a sensational effect an dlighting; Benjamin-Constant's more sober and satisfactory portrait of "Lord Savile" (42: the artist's name is wrongly inserted in the index under "C.," as "Constant, Benjamin"—an absurd mistake); Mr. Lavery's "Lady in Brown" (69), a colour study with a very pretty face attached to it, but grey rather than brown; Mrs. Jopling's portrait of a boy with a model locomotive (75), in which the boy's eager face of interest is admirable; and M. Boldini's full-length portrait of a gentleman (74), which may be a good, even what is called a "speaking" likeness, but which in style and manner touches the lowest level of artistic vulgarity. In the South Room Millais' fine portrait of Lord Salisbury reigns over a mixed collection, ranging from a beautiful little painting by Sir L. Alma-Tadema to the two grotesque works in which Signor Mancini endeavours to show how unattractive an object a painted (or splashed) portrait may be made.

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**Whistler's Etchings.**

At the Leicester Galleries there is on view the collection of etchings by Whistler belonging to Mr. Mortimer Menpes. To the collector this must be a specially interesting exhibition, as there are a good many examples of different states of the same etching, each of which has its own special features. One print of Speke Hall is of value because it has the figure in the foreground, another because it has not got it; one because it has not the artist's monogram, another because it has; another, one of the impressions of "Irving as Philip of Spain" is noted in the catalogue as "described by Wedmore," as if that fact added a special value to it. All that is merely an appeal to the class of persons who purchase a work not for the sake of art, but in order to possess something that others have not got. From the artistic point of view the collection is a remarkable but unequal one, including many things which are the perfection of etching, and others which are mere scrawls totally valueless except, in a commercial sense, for the artist's name attached to them; the little sketch elevation of a house, for instance 189), solemnly inserted in a very wide mount; a thing that a child might have drawn. The various Venice etchings (22, 25, 26, 29, 52) show to perfection exactly what etching can best do—the water left an untouched space except where the boats rest on it; the work concentrated on the distant buildings. No. 52 stands alone as a peculiarly delicate bit of work in which the buildings are silhouetted in a shading of thin vertical lines. "Battersea Bridge" (64), a well-known work, is another perfect example of etching; and "Putney Bridge" (121), "Battersea (dawn)" (109), and "Wych Street" (102), a capital architectural sketch of the upper portion of some of the old houses now destroyed. There are one or two powerful things showing dark effects got with heavy line shading, such as "The Kitchen" (134) and "Street at Saverne" (178)—it is difficult to say, however, whether the last-named is or is not intended for a night effect. The figure subjects are curiously unequal. Whistler seems to have had an unaccountable objection to draw the feet. In the several examples of "Irving as Philip of Spain," in the "Elinor Leyland" (66) and in the "Sketch of a Girl" (104), the feet are evaded or merely indicated as shapeless pointed projections. The figures seem mostly studied merely for general pose and for the lines of costume, the expression of the face being left quite vague. Exceptions are "The Muff" (88) which is piquant in expression, and "The Scotch Widow" (89; why "Scotch?"), which is pathetic; but in general the face seems to have been the last thing Whistler cared about in etching a figure. Among the few lithographs exhibited are some admirable rapidly executed figure sketches; No. 190, a seated figure of a girl; also 198, 199, and 205.

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**The Water-Colour Society Art Club.**

The Royal Water-Colour Society Art-Club, which appears to be a club principally composed of amateur artists in connexion with the society, has enough members to fill the room with a collection, which includes a great many good and interesting drawings, mostly sketches rather than finished works. Among these we may mention Mr. Butler Cato's "Rye" and other sketches; Miss McCracken's architectural subjects from Gubbio and Viterbo; Miss Percival's sketches at Clovelly and Mr. Harding Smith's at Lyme Regis; Mr. Marcus Huish's sketches of coast scenery (No. 93 especially); Miss Tinling's "Ponte Vecchio, Florence"; Miss Madeline Lewis's "Warm sea-scented beach" and Miss Boothby's "Poole Harbour"; and Miss Emery's studies of a "Mill House," exterior and interior. There is a whole group of architectural subjects by Mr. Spiers, who however cannot be classed as an amateur; also two fine sketches at Angers and Verona, by Mr. S. J. Hodson; and at Rochelle and Chinon by Mr. Herbert Marshall. We should not omit either, Mr. Russell Dowson's careful drawing of "The Greek Theatre, Syracuse." The exhibition includes a special collection of drawings by the late W. L. Leitch, in a style which had its day, but seems somewhat out of date now, except the fine "Study of a Windmill," which is of more interest than the quasi-classical studies of Italian landscape.

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**The Birmingham Loan Exhibition.**

The loan collection of portraits by some of the great English painters of the eighteenth and early nineteenth century, now on view at the Birmingham Art Gallery, is well worth going out of the way to see. It includes works by Reynolds, Gainsborough, Romney, Raeburn, Hoppner, Opie, and others. Among the Reynolds's is that most beautiful of all his child portraits, both in expression and colour, "Lady Gertrude Fitzpatrick," the little grave figure standing on the top of a hill, and thence sometimes called "Collina." Among less known but very fine works is Raeburn's group of "James Harrower of Inzievar, with his wife and son." Romney and Gainsborough are also well represented, and the exhibition affords a very good opportunity for comparing the manner and characteristics of the three in portrait painting. Among the more rare class of exhibits are two of John Russell's pastel portraits, "John Musters" (the future husband of Miss Chaworth) as a boy, and his sister Sophia Musters—both admirable examples of execution in pastel, a medium little used in England in those days. The exhibition has a historic value, too, not only for the artists but for some of the subjects of the portraits. We find, for instance, the likenesses of Warren Hastings (Hoppner), Haydn (Hoppner), James Quin

(Gainsborough), Mrs. Jordan as "Hyppolita" (Hoppner), Amelia Opie, the now forgotten novelist (Opie), and Gifford (Hoppner), once the rather too notorious editor of the *Quarterly*. The catalogue is prefaced by a short but well-written critical article on the art of the period represented, and at the end are appended short biographical notices of the artists represented. The getting together of the exhibition, and the make-up of the catalogue are highly creditable to Mr. Wallis, the learned and efficent Curator of the Art-Gallery; and the exhibition ought to be very valuable in an educational sense as well as for its intrinsic artistic interest.

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**Messrs. Agnew's Gallery.**

In the collection of works by eighteenth-century painters, on view in the galleries at 39, Old Bond Street, Messrs. Agnew have again succeeded in getting together a good many fine pictures which are not familiar to us in loan exhibitions. At the top of the room the beautiful portrait of Mrs. Denison, by Hoppner, in a black dress and bare-headed, standing in the middle of a landscape, raises Hoppner higher in our estimation than before, and the treatment seems exactly to suit the character of the figure. Gainsborough's "Mushroom Girl," a kind of Cymon and Iphigenia in modern life, is another fine and little known work. There is a controversy as to whether the "Mrs. Drummond Smith," called a Romney, is not a Reynolds; the predominance of white and the treatment of the dress are like Romney, the position of the hands and the shadow of the hat over the face are like Reynolds: but we are inclined to accept the attribution to Romney. Turner's "Harbour of Dieppe," rather too yellow in tone, shows how carefully he would paint street architecture, as exhibited in the houses on the quay; his "Dutch Fishing Boats," more powerful as a whole, is spoiled both by the bad shipping and the conventional reflections in the water; rough sea-water, in a breeze, does not show such reflections, as one would have thought that Turner, supposed to be such a conscientious student of nature, would have noted. Among the other contents of the gallery are two or three fine portraits by Raeburn; Opie's curiously modern-looking picture, "The Pet Goldfinch"; Reynolds's portrait of the Twelfth Earl of Suffolk, with his careful descending scale of colour from the crimson chair through the brown coat to the buff waistcoat; and a good example of Stark's hard but powerful landscape painting.

## THE ARCHITECTURAL ASSOCIATION.

An ordinary fortnightly meeting of the Architectural Association was held on Friday evening last week in the Meeting-room of the Royal Institute of British Architects, No. 9, Conduit-street, W., the President, Mr. H. T. Hare in the chair.

The minutes having been read and confirmed and some nominations read,

The following gentlemen were elected members of the Association:—Messrs. H. Dennis, C. W. Reeves, E. J. Kelly, S. Greig, H. A. Bower, A. J. L. Leman, E. E. Beaumont, A. C. Caudwell, F. W. Commin, D. G. Round, F. G. W. Dudley, H. G. Burgess, E. D. Brown, F. R. Foster, and H. Morley.

The following gentlemen were reinstated:—Messrs. H. A. Woodington, W. S. Huxley, A. C. Lee, H. P. Burke Downing, and John P. Seddon. The Chairman mentioned that Mr. Seddon was first elected in 1847, being one of the original members of the Association, and he had acted as honorary secretary in 1850 and 1851. The Association could congratulate itself itself on the fact that Mr. Seddon had been reinstated as a member of the Association.

*The New Premises Fund.*

The President said that the following additional donations had been made to the New Premises Fund:—Messrs. T. E. Collcutt, 25*l.*; A. H. Tiltman, 25*l.*; Proprietors of the *Builder*, 10*l.* 10*s.*; Proprietors of the *Building News*, 10*l.* 10*s.*; Leonard J. Williams, 10*l.* 10*s.*; Keith D. Young, 10*l.*; H. O. Cresswell, 5*l.* 5*s.*; F. M. Elgood, 5*l.* 5*s.*; F. W. Lane, 5*l.* 5*s.*; A. C. Martin, 5*l.* 5*s.*; J. W. Penfold, 5*l.* 5*s.*; J. A. Reeve, 5*l.* 5*s.*; Hugh Stannus, 5*l.* 5*s.*; Cecil C. Brewer, 5*l.*; Henry Tanner, sen., 5*l.*; S. H. Hamp, 3*l.* 3*s.*; E. W. Allfrey, 2*l.* 2*s.*; F. R. Betenson, 2*l.* 2*s.*; Walter Cave, 2*l.* 2*s.*; T. P. Clarkson, 2*l.* 2*s.*; R. L. Hesketh, 2*l.* 2*s.*; J. C. T. Murray, 2*l.* 2*s.*; H. Whiteman Rising, 2*l.* 2*s.*; C. H. Brodie, 1*l.* 1*s.*; and Henry Tanner, jun., 1*l.* 1*s.*

On the motion of the President, a hearty vote of thanks was accorded to the donors.

The President also announced that a number of members have, in accordance with the Committee's suggestion, doubled their subscription; a complete list of these will be published in the December issue of the *Notes*. He hoped that this example would be followed.

*The late Mr. Brewer's Drawings.*

The President said that an exhibition of the drawings by the late Mr. H. W. Brewer was being held at the office of the *Builder*, and it would remain open for another week, until Friday, November 13. Those gentlemen who had not already seen the drawings would be well repaid for the trouble of going to Catherine-street for the purpose.

*The Report and Balance-sheet.*

Mr. Francis Hooper, Hon. Treasurer, said he had to move the adoption of the Report and balance-sheet for session 1902-03, which business had been deferred from the opening night of the new session. He did not thnk it was necessary to comment on the figures or facts already published in the Brown Book. The Committee had done its best to expend the money placed at their disposal to the advantage of the Association. Year by year the responsibilities were increasing, and the work in connexion with the Day School and the new premises involved the handling of sums which a short time ago would have seemed very large. The accounts had been carefully prepared by the Secretary, and had been audited by Messrs. Saffery, Sons, and Co., chartered accountants.

Mr. Needham Wilson seconded the motion, which was then agreed to.

The Committee in their Report state that the fifty-sixth session of the Association which ended on May 31, 1903, was one of successful progress in every respect. The membership again showed an increase, and at the close of the session numbered 1,512; 136 new members were elected, 15 rejoined, and the number of losses by death, resignations, and other causes amounted in all to 29. In regard to the new premises at the Royal Architectural Museum, Tufton-street, Westminster, the Committee say:—"It was with much regret that the Committee found it quite impossible to arrange for the Westminster School of Art to continue its valuable work at the museum, as the Architectural Association would require all the accommodation for its own needs. . . . The lease of the present premises at 56, Great Marlborough-street, terminated on Midsummer-day, 1903, but arrangements have been made for occupation to be continued until Lady-day, 1904, by which date it is hoped the Architectural Association will have removed to Westminster. Negotiations are in progress for a lease of 999 years in place of the existing leases of 73 and 23 years respectively. Important alterations were found to be necessary to adapt the premises and obtain the full advantage of the site. Mr. Leonard Stokes has been appointed architect, and the tender of Messrs. Holloway Brothers (8,440*l.*) has been accepted. The Committee trusts that every member will contribute towards the building fund, as a large amount is still required in order to carry out the alterations and provide the necessary equipment. . . . The progress of the Day School has been very encouraging both in regard to numbers and work. The term of Mr. Arthur Bolton's appointment having expired, the Committee have appointed Mr. H. P. G. Maule as his successor. General regret was felt that Mr. Bolton was unable to continue to fill this post, which he had held for two years with the best possible results, but private practice compelled him to relinquish the work. The same reason was responsible for Mr. E. F. Reynolds' resignation, and the Committee wishes to take this opportunity of expressing its indebtedness to both these gentlemen for their interest and work in the school. The immense value of the Day School has now been acknowledged by many leading architects, and no efforts have been spared to ensure its continued success, the work of the students showing remarkable progress. Reference to the balance-sheet and general income and expenditure account will show that the past session has been a satisfactory one financially; in no single instance have the receipts shown a decrease compared with those of the previous session. . . . 214 individual students attended the studio and evening classes, the number showing an increase over the previous year."

Mr. Louis Ambler, Hon. Secretary, announced the following meeting:—November 18.—Discussion Section Meeting.—Paper by Mr. M. G. Pechell on "Travelling on the Continent."

*Modern Churches.*

The President said he regretted to announce that Mr. C. A. Nicholson, who was to have read a paper to them on "Modern Churches," was unable to be present on account of the serious illness of his father. Mr. F. C. Eden, however, would read the paper, and they would be indebted to that gentleman for doing so.

Mr. Eden then read the paper, as follows:—

Modern church design may be said to have been evolved during the century which has just ended. Owing to a variety of causes, church building was at a standstill in England between the death of Queen Anne and the end of the eighteenth century. It is conceded, even by those who disagree with Thackeray's opinion of the Georges, that the influence of the Hanoverian Court was not such as to foster an enthusiastic churchmanship. Moreover, during the greater part of the eighteenth century, the nation was engaged in a life and death struggle with the French monarchy, the American colonists, and afterwards with Napoleon. The population was almost stationary, the old churches sufficed for all requirements, if they fell into disrepair they were patched up, if they were considered draughty and cold ceilings were made, and partitions, pews, and galleries were built; if they fell or were burnt down, they were either left in ruins or else rebuilt in the plainest possible fashion. In London, and some other large towns, a few new churches were built; generally these were proprietary chapels, financed by the ground landlords and supported by means of pew rents.

St. Peter's Church in Vere-street, and Berkeley Chapel, Mayfair, may be taken as typical of the ecclesiological ideas of the middle of the eighteenth century, plain, substantial, brick buildings, with round-headed windows and ugly belfries; their interiors reminiscent of St. James', Piccadilly, or St. Martin's-in-the-Fields.

The Church of England was roused to activity by the preaching of the Wesleys and the influence of the Tractarians, and, since the final overthrow of Napoleon, the prosperity of the nation has steadily increased. The growth of cosmopolitanism has led to the toleration of all forms of religion. The Pope is no longer looked upon as an ecclesiastical Guy Fawkes; Dissenters and Freethinkers are no longer treated as anarchists; and, consequently, an immense amount of building has been undertaken by the Church and other religious bodies during the past century.

The few churches that were built or enlarged between the Reformation and the Great Rebellion were generally of debased Gothic character, such as is met with in many Oxford colleges. Even Inigo Jones, who introduced Italian models after his travels on the Continent, built the church of St. Katherine Cree and the chapel at Lincoln's Inn somewhat after the old Gothic manner. After the Restoration, however, Charles the Second and his Court had grown accustomed to foreign fashions during their long exile abroad, and the wits and critics of the period satirised Gothic architecture as a barbarous anachronism. The fashionable style of the end of the seventeenth century became that of the school of Wren. Side by side with this, however, there lingered on the remains of the old Gothic tradition, which had never entirely died out in the remoter country districts, and which was in

some few instances revived under the patronage of the old-fashioned divines of the school of Laud and Andrewes. Thus we find Bishop Hackett restoring the ruined cathedral of Lichfield, and rebuilding its central steeple upon Gothic lines. Again, two of Wren's city churches and four of his steeples are of Gothic character; so, too, is his work at Westminster Abbey. At Oxford, Tom Tower and Hawksmoor's work at All Soul's, are certainly more Gothic than Classic, and so are the nave and tower of the church at Warwick, built in Queen Anne's reign by one Sir William Wilson. The churches at Dartmouth and Falmouth, the spires at Higham Ferrars and at Stratford-on-Avon are familiar examples of Gothic work executed during the seventeenth and eighteenth centuries.

The closing years of the eighteenth century, the period which may be taken as the starting point of modern church history, was the age of the Greek revival in architecture. The last lineal descendant of the school of Wren was Sir William Chambers, who was also one of the earliest of revivalists, for, on his return from his travels in China, he built the Pagoda and other structures at Kew in imitation of Chinese work. The latticed balconies remaining in front of several houses about Bloomsbury, some summer houses in suburban gardens, and a few lacquered grandfather's clocks, are almost the only evidences of the once popular craze that was introduced by him. The style of the Adam brothers was the vernacular architecture of the day. Based to a certain extent upon Anglo-Classical traditions. The Adam school had introduced a certain playfulness into the design of domestic buildings, united with a perhaps excessive degree of refinement in architectural and decorative details, these details, though of classical origin, being treated in a novel and thoroughly artistic manner.

The publications of the Adams themselves, and of Stuart and other writers, brought into fashion the more literal reproduction of classical architecture, both of Greek and Roman character. But, meanwhile, other influences were making way among a large class of people. In the first quarter of the eighteenth century the *Gentleman's Magazine* was established. This publication soon became the recognised chronicle of matters of antiquarian interest. Even the earlier numbers contain occasional descriptions of mediæval buildings, the later volumes of the eighteenth century, and the earlier ones of the nineteenth, are full of entertaining criticisms of contemporary architecture, and the publication continued to treat of similar subjects until 1865, or thereabouts. The influence of the *Gentleman's Magazine* was distinctly in favour of a revival of Gothic architecture.

The first person who had seriously attempted this was probably the architect Essex, since Horace Walpole's performances can hardly be taken seriously. Essex was employed at Ely, where he refitted the choir of the cathedral; at Lincoln, where he rebuilt one of the north-eastern transept chapels in a very correct imitation of thirteenth century work, and also set up the canopied reredos to the high altar; and at Cambridge, where he designed the reredos of King's College Chapel.

At the end of the eighteenth century there also flourished a certain clever Italian modeller, one Bernasconi, whose attention was turned to the study of Gothic ornament. He was employed in refitting the choir of Southwell Minster, where he set up stone canopies to the stalls, the details being carried out in a hard cement or stucco. Both the design and the workmanship were admirable, and, since these fittings were unique of their kind, it seems a pity that they were destroyed in the recent restoration of the cathedral. The canopies of the return stalls have been preserved; they are partly fourteenth century work, but were extensively restored by Bernasconi. The same artist restored the former reredos at Westminster Abbey, and made that in the Beauchamp Chapel at Warwick. He may also have worked under Wyatt at Oxford and elsewhere. The Wyatts, father and son, had a large practice at the beginning of the last century. Their name has become a by-word on account of the sins they committed in the name of restoration, but much of their work is effective, if somewhat theatrical in character, as at Fonthill and Windsor, and in the remodelling of New College Chapel.

The early Gothic revivalists were not, however, numerous nor influential, the style which most commended itself to the critics of the Regency and the reign of George IV. being that of literal classical revival. Soane, Decimus Burton, and Wilkins were leaders in this movement, while the Wyatts and Nash frequently worked in the same style, which was adopted in most of the numerous London churches that were built in the years immediately following the battle of Waterloo.

In the year 1818 Parliament unanimously voted a million of money for church building in London and other growing cities. A favourite ecclesiastical architect of the day was a certain F. Bedford, who designed many churches in the south of London, of which St. John's, Waterloo-road, may be taken as a typical example; a large, plain, square room fitted up with pews and galleries, with a portico at one end, and a belfry on the ridge. Merciless criticisms of some of the churches appeared in the *Gentleman's Magazine* over the signature E. I. C. This critic was, however, generous enough in his remarks on some of the better work that was being done at this time by Cockerell, Barry, and Savage. Three churches were built at the expense of the ratepayers in St. Pancras by Henry Inwood. The new parish church is too well known to need description. It was designed in 1819 after the model of the Erectheum, the steeple being adapted from the Tower of the Winds. In spite of the absurdity of the general design, the church is well worth studying for its excellent workmanship and the refinement of some of its details. The interior of the apse is decidedly fine and original. The two other churches in St. Pancras by the same architect are inferior to the parish church; that in Regent-square is a rather ornate Greek Ionic building, somewhat on the same lines as the last; the other, in Somers Town, is a dismal piece of Gothic work in white brick.

The most remarkable classical church of this period was Cockerell's Hanover Chapel in Regent-street, which stood on the site of Salviati's shop. The recent destruction of this charming building seems most deplorable, although the new church in Davies-street, which was to replace it, is one of our best and most interesting modern buildings. The design recalled that of Hawksmoor's church in Lombard-street; it was a square church with twin belfries. Hawksmoor's square nave had, however, a square lantern and flat roof; Cockerell's was covered with a dome. It also possessed a portico projecting across the pavement of Regent-street and an annexe at the west end. The entrances were under the portico, at the east end of the church right and left of the altar, which was backed with a high reredos forming the front of the organ loft. The supports of the dome were arranged like those at St. Mary's, Woolnoth, but the interior of Cockerell's building was disfigured by a double tier of galleries. In later years the liturgical arrangement of the church had been altered, and a chancel formed at the west end opposite the entrance. The exterior was very effective, with its dome and two towers, and the portico was not spoiled with an ugly pepper-pot steeple set astride its pediment.

Marylebone Church, completed in the year 1818, from designs by Thomas Hardwick, at a cost of 60,000*l.*, has a pretty steeple bestriding the ridge of a rather fine portico, the combination of these two features is incongrous, but the effect of the building is good, owing to the weathering of the Portland stone of which it is built. The original arrangements of the interior were quite unprecedented, two tiers of galleries, and the altar backed with a divided organ, the centre of which enclosed a large transparency by Benjamin West. John Nash's well-known church in Langham-place is an oblong basilica arranged more or less in accordance with eighteenth century traditions; the west end has a round tower, with an effective Roman Ionic peristyle and Corinthian columns round the belfry. It is finished with a tall, sharp spire, 146 ft. high, a striking, if peculiar, feature, and the church is most admirably placed at a turn of the street.

Soane's churches at Walworth and Marylebone, St. Peter's, Eaton-square, by Hakewill, and a church in Bermondsey by Savage, are all of Revived Greek character, and better than the general run of the work done at the time, each of them showing some attempt to evolve a type of building suited to the needs of the age, instead of a blind reproduction of temple forms.

The Gothic tradition, as we have seen, had hardly become totally extinct before attempts began to be made to apply mediæval details to modern buildings. Churches more or less Gothic in character were built in London and elsewhere. Such are St. Dunstan's-in-the-East, designed by Lang, the architect of the Custom House, about the year 1820; and St. Dunstan's, Fleet-street, by Shaw, the architect of Christ's Hospital, about 1825—an octagonal nave with an effective tower and openwork lantern.

Amongst the Commissioner's Churches, two—by Sir Charles Barry and James Savage, at Islington—were singled out for special praise by E. I. C., the critic who has been mentioned in connexion with the *Gentleman's Magazine*. These are large brick buildings of Perpendicular character, pewed and galleried like the Classic churches of the period, built with embattled parapets and square towers or octagonal belfries. Similar churches were built at Edinburgh and in several provincial towns, such as Liverpool and Brighton, and places in the Potteries district. The best of this class of churches was that of St. Luke, at Chelsea, by James Savage, a building of considerable size, with a pinnacled west tower. The nave of this church is groined in Bath stone, and has flying buttresses very scientifically designed; and, though the building is not at all massive, it appears to have stood very well. Taking into account the difficulties which its designer must have had to face, it cannot be denied that his work does him great credit.

The liturgical arrangements of all these churches were bad, and their architectural detail was generally tame, when it was not altogether ungraceful. Yet, as a general rule, they were honestly and soundly constructed, and sometimes they have an appearance of size and stateliness which is lacking in much of the work of succeeding generations.

The Tractarian movement, the writings of Pugin, and the rebuilding of the Palace of Westminster, combined in the encouragement of the Gothic revival in the second quarter of the nineteenth century. Owing to the growth of religious toleration testified to by the repeal of various laws directed against the Roman Catholics and Protestant dissenters, perhaps also owing to the rise of an easy-going latitudinarianism in the National Church, Gothic architecture ceased to be looked upon with suspicion, or regarded as a badge of Popery. The Tractarians taught the importance of the sacraments, and their successors restored the observance of many ceremonies which had fallen into disuse in previous generations. As a natural consequence, the preaching places which had hitherto sufficed for them, ceased to satisfy the requirements of the majority of Churchmen. The modern type of church arrangement was thus gradually evolved during the reign of Queen Victoria, and, with very few exceptions, existing buildings were altered in such a way as to make them conform to the prevailing fashion.

The churches built at the beginning of the nineteenth century are mostly to be found in populous towns, but, after the year 1837, numbers of new churches were built in country places, and many of the old village churches were restored; the attention of architects was thus diverted to the picturesque qualities which belong especially to this class of building.

A prominent early Victorian architect was Edward Blore, who restored Lambeth Palace and refitted the choir of Westminster and Peterborough. There exist several churches from his hand, some of them in a starved Early English style, others imitated from the Romanesque churches of the Rhine provinces. Christ Church, Watney-street, Stepney, and the chapel of St. Mark's College, Chelsea, are examples belonging to the last-mentioned class. These buildings are, as a rule, built of white brick, with cement or Bath stone dressings, and they are characterised by a singular combination of pretentiousness and meanness. The style, fortunately, found few admirers, and, after isolated attempts to reproduce Norman work, or, as in the case of Wilton Church, basilican arrangements, the fashionable church architects of the middle of the last century settled down to a style imitated from English Decorated work, using Early English, which was supposed to bear being starved, for cheap jobs.

Considerable improvements were at this period introduced in the liturgical arrangements of churches—galleries and pews were generally abolished, chancels were formed, and more space was provided about the altars.

Like most good people who are very much

in earnest, the Gothic Revivalists often went too far. They built too hastily and too cheaply; they restored too energetically. Some of their work is already ruinous after only half a century's wear and tear; yet it is hardly fair to blame the individual architects for this, since they were obliged to supply a growing demand at a very low cost, and, if one man declined a commission, a rival would always be found ready to step into his shoes. It is instructive in this connexion to compare the cost of a few churches built at different periods during the last century:—

| Date. | Church. | Architect. | Cost. | Per Sitting. |
|---|---|---|---|---|
| Begun .....1813 | Marylebone Church..... | Hardwick ..... | £60,000 | £25 |
| Consec. ... {1822 | St. Pancras Church ..... | Inwood ..... | 76,000 | 30 |
| {1824 | St. Luke's, Chelsea ..... | Savage ..... | 20,000 | 10 } Bath |
| 1825 | Hanover Chapel ..... | Cockerell ..... | 16,000 | 11 } stone. |
| 1846 | Trinity, Paddington..... | Cundy ..... | 14,000 | 7 |
| 1846 | St. Saviour's, Leeds..... | Derick ..... | 20 000 | 15 |
| 1854 | Newport, I W. ..... | Dawkes ..... | 11,000 | 8 with tower |
| 1854 | Doncaster Church ..... | Scott ..... | 40,000 | 20 |
| 1870 | Cork Cathedral..... | Burges ..... | 100,000 | — |
| 1890 | Trinity, Chelsea ..... | Sedding ..... | 20,000 (shell) | 16 |

And it must be remembered that the older examples generally had galleries, a fact which makes the discrepancy between them and the later buildings in respect of cost and accommodation the more remarkable.

The cheapness of churches built in the fifties may be partly accounted for by the growth of the railways, and partly by the fact that church designs were then generally based upon rural and parochial models. The choice of this type minimised constructive difficulties, and made it possible to cover a considerable space in a very economical fashion. As a result, the churches of this age are seldom of a really imposing or dignified character.

Pugin set the fashion of spires and open timber roofs, neither of which features can be made effective in a cheap church. Pugin's own works invariably possess distinction and character, notably his churches at Birmingham and Cheadle, the convent at Alton, the churches at Rugby and Ramsgate, and his work at the Houses of Parliament.

The first of these, St. Chad's, Birmingham, built at the very commencement of the reign of Victoria, is a masterly design, exceedingly bold in conception. Its tall nave and aisles are covered with a great unbroken slant roof, carried on graceful arcades. The transepts are shallow, and the choir has an apse, and is flanked with chapels. Its stained glass, its woodwork, and much of its metal work, are both rich and dainty in effect. Externally, it is very severe and simple, with red brick walls and slate roof. The hipped roofs of the transept somewhat recall Flemish work. The western spires are rather small in scale, neither turrets nor steeples, but the sculpture on the west doorway is charming. The frontispiece of Pugin's "Apology" shows this church with a central spire, which was never carried out.

The style which Pugin could handle impressively was less successful when imitated by his contemporaries. Innumerable churches were built in large towns and their suburbs in the forties, fifties, and sixties, as well as in country places. The ideal materials of this age were Kentish rag, with Bath stone dressings. The style was generally Decorated, the roofs very steep open ones, with plaster between skimpy varnished rafters; floors were laid in red and black tiles: pews were of varnished deal; organs were at first placed in west galleries, and later on in chancel aisles or organ chambers. Their pipes were gaily illuminated. Arcaded dadoes under the east windows did duty for reredos, and the fashionable glaziers were Hardman and Wailes, though a few enamel transparencies were imported from abroad. It is needless to quote examples to illustrate this dismal, though perhaps inevitable, chapter in the annals of modern ecclesiology. It must not, however, be forgotten that some good work was done at this time. Scott's church at Camberwell, for instance, with its fine central steeple and its long chancel, is solidly built and of good outline, though internally the effect is spoiled by the galleries. A very fine Roman Catholic church in Stepney was built about this time from the designs of one Wardell; and away in Australia, the cathedral, the university buildings, and numerous churches in the city of Sydney were being carried out under the care of Blackett in a bold and vigorous Perpendicular manner, somewhat reminiscent of the work of Wykeham.

Meanwhile, the Ecclesiological Society, the moving spirit of which was Beresford Hope, was steadily influencing the architects of the day. Beginning by insisting upon a literal reproduction of old forms as a necessary preparatory process, the ideal of these enthusiasts was to bring about the development of a new and living vernacular architecture based upon Gothic models.

Since the Ecclesiological Society and its individual members possessed considerable influence in the selection of architects to carry out church work, their opinions naturally carried great weight. Scott, and Brandon the architect of the Irvingite Church in St. Pancras, were to a certain degree in sympathy with the views of this Society, but less so than Carpenter, Butterfield, and Street. Carpenter's opportunities were few, but his fine church in Munster square is sufficient evidence of his ability, and an unexecuted design of his for a cathedral at Colombo is quite remarkable as an original attempt to adapt Gothic to a hot climate. Slater, who had been partner with Carpenter, Ferrey, Withers, Dawkes, Buckler, Brandon, Teulon, and Christian were all popular church builders in the fifties and sixties. But the work of Butterfield and Street was far ahead of that of their contemporaries, and its superiority quite justifies the patronage they received from the Ecclesiological Society. All Saints, Margaret-street, Butterfield's first great work, was designed so long ago as 1849, and is a marvellous production for its date. The fine outlines of this church, and the completeness and thoughtfulness of its details, stamp its designer as an artist of real genius.

Whatever may be thought of some of the details of Butterfield's work, there can be nothing but admiration felt for his strict insistence upon principles, and for the thoroughness with which he worked. When he built All Saints, Margaret-street, he laid down certain rules of his own, and from those rules he never deviated at any period of his long career. Although no two of his works are alike, every one of them exhibits the same leading peculiarities, a complete mastery of proportion and scale, a rigid insistence upon sound construction and accurate workmanship, and upon a certain definite standard of liturgical arrangement. His architectural detail was invariably based upon purely English models. He made a frank use of modern materials and modern constructive expedients, and always insisted upon the inclusion of every detail of ornament and furniture as part and parcel of the architect's scheme, determined by him at the very outset of an undertaking. Perhaps Butterfield's greatest success was his re-modelling of the school chapel at Rugby; where, with most unpromising materials, and upon a cramped site, he succeeded in producing a more original and dignified chapel than is possessed by any of the great English schools, hardly excepting even Eton or Winchester. The mention of the last-named building, however, recalls the fact that Butterfield's restoration work is less commendable than his original designs, at any rate if it be considered an axiom that the restorer should efface his own personality in his work. Butterfield had few followers, but the work of George Edmund Street had a very strong influence upon his contemporaries. Like Butterfield, Street remained faithful to Gothic motives, though in the middle of his career he was very much influenced by the beauties of French and Italian models. His constructive ability was hardly equal to that of Butterfield, but, like him, he insisted upon sound building and upon adherence to a standard of liturgical arrangement in all his works.

Sir Gilbert Scott, in his career of forty years' duration, did as much as any architect to influence the taste of the nation. Working at first in correct English Decorated style, his later buildings are often somewhat French in character, though he never went to the same length as Street or Burges in these matters. Posterity will perhaps judge him upon the merits of the numerous restorations which he carried out. This is hardly fair to his memory, he may have made mistakes sometimes; but, when we look at St. Albans, at Chichester, and at Southwell cathedrals, and at many Continental churches we may well be thankful that he was at any rate more conservative and modest than most of the architects of his time.

Burges did not carry out very much important church work besides Cork Cathedral and the excellent restorations at Waltham Abbey. His church of St. Faith, at Stoke Newington, is, however, interesting as being arranged upon distinctly modern lines. It consists of a wide nave with an apse and a coved ceiling and broad lancet windows, below which runs an arcaded passage aisle, the general disposition recalling the Bishop's Chapel at Rheims, and the detail being French in character. Burges' fine church at Limehouse, with its simple saddleback tower, is less well known.

The churches built by James Brooks in North London are designed in an early and severe manner, solidly built, and of fine proportion. Two of these, St. Chad's and St. Columba's, at Haggerstone, are cruciform buildings, the latter with a low tower over its chancel, and are distinctly impressive, although, like much of this architect's work, rather cold and uninteresting in detail. Brook's churches are roomy and well arranged for modern requirements, and their architect frequently introduced vaulting over the whole or a part of the buildings carried out by him.

The late John L. Pearson's large town churches are a class by themselves. Beginning with the pretty but rather tame building in Bessborough-gardens, in correct middle-pointed style, he was next employed at St. Peter's, Vauxhall: an apsidal brick church of French character, vaulted throughout. He afterwards settled down into a distinct manner of his own, which is exemplified at Kilburn and Red Lion-square, at Croydon, Norwood, Liverpool, and Bournemouth, and which culminated in the cathedral at Truro. These churches are all vaulted throughout, and designed with great constructive skill, the area of the supports being reduced to the least possible limits. Their plans are often ingeniously arranged to fit an irregular site, their detail is severe and of strictly English origin, but they vary considerably in general design. Perhaps the individual features of these churches may be considered unduly small in scale, and their effect is rather toy-like in consequence of this, yet the various parts are always in agreeable proportion with one another, and are refined in themselves. In later life both Brooks and Pearson carried out work of Decorated and Perpendicular character, but their chief successes were attained when they were working in earlier styles.

A contemporary of these was the late Sir Arthur Blomfield, some of whose earlier churches deserve attention on account of their frank modernity, iron columns and galleries being freely introduced. The re-modelling of Quebec Chapel, near the Marble Arch, was carried out from Blomfield's designs, and St. Barnabas, Oxford, was built by him in a plain round arched style, mainly of concrete. His later work was usually of Perpendicular character.

Little important church work was done at the end of the nineteenth century, and most of it was entrusted either to the architects just mentioned or to living artists of unquestioned ability. The younger Gilbert Scott and John Sedding, though their opportunities were few, certainly founded a school of imitators, if not of followers. The former, with Messrs. Bodley and Garner, and others, evolved a refined modification of late Gothic work which is seen at its best in large town churches. Sedding, with an intimate knowledge of old work, was, nevertheless, frankly modern in his ideals. Each of his buildings marks a fresh phase of his versatile powers. The earliest and most complete of his churches, that at Bournemouth, has a nave and chancel with very slender arches opening into a north aisle, a stone rood screen and reredos, and a western tower, the detail being late Decorated, and all the accessories of the church very complete. Cardiff, Hayle, Falmouth, and Highgate are great, simple, hall-like churches, with narrow

aisles and no chancel arches, their detail based upon early models; and their interiors invariably characterised by a remarkable sense of spaciousness. At Truro Sedding followed the old Cornish type. At Clerkenwell the work is Renaissance, steel stanchions and girders being enclosed in concrete columns and entablatures. Holy Trinity, Chelsea, is a wide, hall-like church, with widely-spaced and massive piers, and, as is well known, it was intended to give eminent painters and sculptors a free hand in its internal decoration under the general guidance of the architect. The last church which Sedding designed was built after his death at Ealing by his successor, Mr. H. Wilson. Here the supports are unusually far apart, and the piers carry wide and low segmental arches. There is no clerestory, but galleries are formed over the flat ceilings of the aisles, with three triforium arches in each bay of the nave. The nave is lighted by a huge west window with traceried buttresses, suggested, perhaps, by those at Gloucester. Sedding, like Pugin, was a most versatile designer. His woodwork is unrivalled in fancy and refinement; his embroidery, glasswork, and metal work are full of interest, and always designed in strict accordance with the nature of the material used.

To some extent J. Bentley's work resembled that of Sedding, though it was founded more strictly upon precedent. In his last and most important church, he was compelled to follow archaic and foreign models, and he attained a result which bids fair to be honoured with the sincerest form of flattery.

During recent years, many good, bad, and indifferent churches have been built, many styles have been imitated, and many mannerisms developed only to be forgotten. One is therefore led to the conclusion that architectural style is no longer a question of mouldings and traceries in these days of cosmopolitanism and railways.

A building may be unmistakeably modern whatever may be the shape of its windows or its pillars, the disposition of its parts, or the materials of which it is constructed.

Hence there is little advantage in discussing questions of style, which, after all, must be left to the discretion of the individual designer.

Unintelligent plagiarism of eccentricities should, however, be deprecated. Thus, a fashion has lately arisen for bisecting traceried windows with clumsy mullions running up to the arch apex, a device calculated to cause the stonework to be fractured in the event of any settlement. Another latter-day freak is the boldly buttressed tower, abruptly cut off at the top without any cornice or other architectural finish, and sometimes capped with a temporary looking shed-like roof, or with a stunted dome.

As regards ornament, it goes without saying that it should not be used unless it is the best of its kind. This means that good diaper work is better than bad figure work; whitewash is better than commonplace decoration; and plain windows to be preferred to tinted cathedral glazing, and, indeed, to most stained glass. Brick and stone are better than tawdry polished granite, and good woven work than ordinary church embroideries.

Architecturally, the great invention of recent years is the cheap church. The cheap church of fifty years ago was ornate, but shoddily built. Twenty years ago economy was effected by building substantial and fairly complex churches of the cheapest and ugliest materials, red and yellow brick, fitting them up with varnished deal furniture, and stunting their general proportions. Where funds are limited it seems better to adopt an economical plan from the outset, discarding chancel arches and complexities of roofing, and spending the available funds upon sound building, and some degree of finish in the details. Sedding's churches at Falmouth and Ealing are capital examples of economical planning. Though solidly built, and of good scale and proportion and interesting detail, the cost of these churches worked out at about 6d. a foot, and 9*l*., or less, per sitting. Economy may be effected by avoiding undue multiplication of parts, and by disposing the section of the church in such fashion as to secure an agreeable proportion in each of its alleys without undue expenditure of material.

The unit by which the eye measures the size of a church is the width of the nave bays. If these are unduly wide, and the scale is not restored by some device such as a subdivision of the bays, the church looks shorter than it really is. We must all have noticed how the adoption of sexpartite vaulting shortens an interior. On the other hand, if the features are too small, the church will look toy-like. The best dimensions seem to vary between 15 and 25 ft. according to the size of the church. An agreeable proportion between height and width can generally be secured, whatever the size of the church, by the adjustment of the relative widths of nave and aisles. Thus, if a church be 60 ft. across, and its nave 30 ft. wide, the wall plates must be, let us say, 40 ft. from the floor, in order to secure agreeable proportions. If, however, the nave be reduced to 21 ft. in width and the aisles proportionately increased, the wall plates need only be 28 ft. from the floor in order to obtain the same proportion as before. Unless ample funds are available it seems a mistake to attempt a clerestory, because a one-story building looks much higher in proportion than one in which the height is subdivided into pier arch and clerestory. It is generally possible to obtain a sufficiently tall arcade to give dignity to the interior of a one-storied church, and if the aisle roofs are flat or span ones like the old west country churches, a dignified range of windows can be contrived in the aisle walls. Where clerestories are attempted in small churches, it is desirable that there should be a considerable difference in scale between aisle and clerestory. Thus the clerestory may be subordinated to the aisle, as was commonly done in fifteenth century parish churches, or on the other ' and, the clerestory may dominate the design like that at Malvern Abbey. The cheapest known form of church is that in which a single large slant roof covers both the nave and the aisles. If this plan must be adopted for the sake of economy, it is still possible to secure good scale in the central alley by using bold arcades and large end windows. In these cases the aisles must, of course, be sacrificed, and their windows must be small, perhaps square-headed. Good hints for the treatment of such churches may be gathered from the village churches in the timber districts of England, and from some French work. The detail of such buildings should, of course, be simple; and the extent to which simplicity may be carried without sacrifice of dignity may best be learned from a study of old work.

A small and cheap, but most successful, village church was built some years ago by Mr. Harrison Townsend in a Surrey hamlet. Its plan is without aisles, a simple nave and sanctuary with shallow transepts and a small chancel enclosed with screen work. The roof is low-pitched, and covered with pantiles, the eaves project boldly, a simple bell cot stands over the sanctuary arch. The ceiling is a Welsh groin, springing some 5 ft. from the floor, and there are a range of plain round-headed windows on each side, a large western doorway, and a recessed sanctuary cleverly lighted from the roof. There is a boldness and distinction about this little church which it is quite unusual to find in the generality of modern work, and its cost worked out, I believe, at not more than 3*l*. or 4*l*. a sitting.

Although, as has been indicated, it is possible, and often legitimate, to exercise parsimony in adjusting the proportion of the cross section of a church, it must not be forgotten that actual height is a thing in itself most desirable. Although lack of height can be neutralised by skilful disposition of the resources at the architect's disposal, it is a very false economy to attempt to save money by crowding the floor space of a church. The planning of altar, font, seats, and so forth are determined by the average sizes of the human body, and the requirements of the Incorporated Church Building Society may be taken as defining an irreducible minimum in these respects. A sanctuary should be roomy, not less than one, or, in large churches, two bays in length. Unless there is ample space steps should not be multiplied, narrow and crowded steps being both dangerous and undignified, especially at the altar. Altar rails should be placed upon a single step, and the approaches and return gangways should be broad and direct.

The wider that pews can be spaced the better. If the site is cramped it is better to introduce galleries than to crowd the floor space. Pews seem preferable to fixed rows of chairs, which are ugly and rickety, but there seems no good reason why a part of the church should not be pewed, and the rest of the floor left open and used only for movable chairs, as is often the case abroad. The usual English system is possibly answerable for keeping the very poor away from church from a feeling of shyness at having to sit alongside of well-dressed people in a public place.

Roomy vestibules, screened off from the body of a church and fitted with swing doors, greatly add to its convenience and comfort, and may be advantageously introduced, even though they may necessitate the building of western galleries. Vestries, and accessory buildings, are too generally cramped in modern churches, but a detailed discussion of these matters is unnecessary, since they have been dealt with in a thoroughly practical and sensible fashion in Mr. Micklethwaite's excellent little book upon modern parish churches.

As regards the position for the choir and the organ, it is important that these should not be placed too far apart, nor be at a long distance from the altar in an English church, because large portions of the prayer book services take the form of verse and response between priest and people. The continental plan of treating the musical parts of the service as independent of the ritual—for instance, the performance of organ solos or anthems during the canon of the mass—does not seem likely to commend itself to English ideas. Except, therefore, in a very short church, there are objections to placing the organ and choir in a west gallery; though, if there can be two organs, the larger instrument should certainly be placed at the end of the nave or of one of the transepts, where sufficient height is available to allow the larger pipes to speak properly. The common custom of placing the choir in the chancel generally works fairly well, and it seems a pity to abandon it for the mere sake of novelty. But in some very large and long churches, and in cases where there is a low and narrow chancel arch, the singers are best placed in the nave or in galleries facing each other, like those at Milan and St. Anastasia, Verona, and Exeter Cathedral. These minstrel galleries may be used with a west end organ. The best arrangement must, however, be determined by so many circumstances, that it is not possible to lay down a general rule for the placing of the organ and choir. The Italian plan of putting them behind the altar would not commend itself to English ideas, although it is a suitable arrangement where, as in monastic churches, the choir is entirely composed of clergy. A choir of laymen and boys placed facing the communicants at the altar rails would be a cause of distraction to many people, and this, therefore, would be an objectionable arrangement in a modern parish church.

Chapels are convenient, indeed, almost necessary adjuncts to parish churches of any size. A chapel should be conveniently placed with regard to the entrance doors of the church, or it should have an entrance of its own, and its heating and lighting arrangements should, if possible, be self-contained. Only two steps are necessary at a side altar, the footpace and the communion step, as side altars are only used for plain celebrations.

The traditional position of an English church tower is upon the main axis of the church, either at the west end or upon the crossing. But there may often be circumstances that suggest some other position as best for the tower, such as the side of the nave or the chancel; and in such cases it is often possible to obtain fine internal effects by a judicious contrast of the massive supports of the tower with the lighter piers and arches of the rest of the church, as is done in the fifteenth century church of St. Mary Steps, at Exeter. The internal treatment of the tower is one of the great chances open to the church architect, and this feature has been handled in a remarkably masterly way by Butterfield at St. Alban's, Holborn, at Stoke Newington, and at Rugby. Some suggestive tower interiors are occasionally met with in small ancient churches, such as Woodeaton and Minster Lovell, near Oxford. And the seventeenth century Brittany steeples, which are structurally towers turned inside out, deserve study as being less costly than ordinary towers, and far more effective than mere bell cots.

Should it fall to our lot to design cathedrals or large collegiate churches, we should, I think, unless we have very good reasons to the contrary, place the towers and dispose the main lines of the building in a regular and monumental fashion, and it is very doubtful whether a happier grouping can be desired than the traditional English combination of a large central lantern with smaller belfries at the west end. The requisites of a modern cathedral are a nave sufficiently spacious for a large congregation, and a choir roomy enough for the

cathedral staff and the senior clergy of the diocese. The cathedral must contain the official chair of the bishop, and it should dominate a group of diocesan buildings such as the chapter house, the congress hall, the diocesan offices, the music schools, and so forth. Many mediæval cathedrals and abbeys have been more or less successfully adapted for modern use, but it will be admitted that a new cathedral should not follow old monastic models in too literal a fashion. The ideals of the French cathedral builders of the thirteenth century as exemplified at Paris and Bourges, have more in common with modern requirements than the monastic churches of our own forefathers. The plans of the French cathedrals are unbroken rectangles, with apses and double aisles, and galleries all round; the choir and altar being in the middle and in full view of the laity, who were admitted to the nave, the aisles, the ambulatories, and the galleries. This appears to be an ideal arrangement for a great national church, and possesses advantages that are lacking in the later French cathedrals, with their innumerable private chapels, and in our own minsters with their long, narrow plans and closely-screened choirs. The cathedral builders of the future should surely make the fullest use of modern constructive facilities and engineering skill in order to enclose great unbroken floor spaces with structures that shall be stable, fireproof, durable, and rust proof. The great crossing space at St. Paul's has enabled the Chapter to make their church in a certain sense the religious centre of the British Empire. An ordinary Gothic church is not suitable for great national or civic functions; witness the makeshift expedients that are necessary when Westminster Abbey is used for coronations or thanksgiving services.

It has not been possible in this paper to discuss the special constructional problems that have to be faced by the church builder, nor to treat of the details of architectural ornament, of sculpture, of painting, or of stained glass. A knowledge of all these matters is especially necessary for the church architect, since shoddiness and commercialism are more offensive, if not more immoral, in church work than they are in buildings designed to gratify the luxurious tastes of individuals, or the vanity of secular corporations. Thirty or forty years ago the average architect, imitating the mannerisms of the leaders of the Gothic revival, tricked out his wall surfaces in party-coloured brickwork, or left them in rough rubblework pointed with black mortar; set up columns of polished granite, and laid floors with shiny tiles; designed gabled screens and reredoses; and filled our churches with garish and ill-drawn glass, and with clerical tailor's metal work. All this was supposed to constitute a vigorous school of architecture. We, who are ready enough to laugh at the work of the sixties and seventies, must take care lest, in our craving for originality, we should turn the ridicule of future critics against ourselves. And since originality is not to be obtained by a mere jumbling together of several old features of different origins in a new building, the surest way to architectural progress would seem to be that we should acquire a thorough knowledge of construction and of design, that we should study nature and avoid conscious copyism either of old or of contemporary work, and that we should thoroughly master the conditions of every problem presented for our solution, and endeavour to work out that problem in the simplest and the most unostentatious fashion that we can discover.

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Mr. E. P. Warren, in proposing a vote of thanks to Mr. Nicholson for his admirable paper, said he had listened, as he was sure they all had done, with the greatest interest, and the only regrets possible were that Mr. Nicholson was absent and the cause of that absence. The paper was of great interest, both on account of the subject and the extremely scholarly and thoughtful manner in which it had been handled. It was quite evident that Mr. Nicholson had been for many years a keen student of the subject, and that he had mastered the details from the practical, constructional, and also from the emotional and artistic points of view. In dealing with a church it was true that an architect was, in many respects, dealing with problems which differed from those relating to other buildings; but the constructional problems were, of course, affairs of commonsense, and the same as in other buildings, for there was no distinctive difference in a church roof or arch from any other roof or arch. That was to say, they had to bridge or cover a space in the case of the roof, which was just what they had to do in another and different building. But this common-sense aspect in regard to church building had frequently been very much lost sight of, and designers of churches had felt that in these edifices, dedicated to a special end, and calling up special feelings, it was necessary to have certain features, whether they were constructionally required or not—that those features must be put there for the sake of having them. For instance, dividing the chancel from the nave by an arch, which generally implied that the chancel in old work was lower, and sometimes, but not often, that it was higher than the nave. There was this constructive reason for such a division in old work, but one frequently saw in modern churches the arch introduced without any constructive reason, and just out of a feeling that this division was proper between chancel and nave. The arch, in the minds of some architects, seemed to represent a necessary frontier line between chancel and nave. In modern days there was no necessity for this division. In old churches that division frequently arose from the fact that a parish church grew up from a chantry served by some neighbouring abbey or monastery, and a nave was subsequently added for the use of parishioners. This being so, it was intelligible that there should be this constructive division. Mr. Nicholson had said that in building a church where economy was a necessary point—and that was nearly always the case—that they would be wise to avoid the chancel arch, not only because it was obviously more economical to build a great parallelogram without this division, but especially because, if they were restricted in length, they could get a far more dignified effect by having a continuous span from end to end than by having this drop or dip caused by the chancel arch. It was a curious fact, from the economical point of view, that when one got beyond a certain size in a church building—say for more than 300 people—it became easier as the size of the church increased to build economically. They would see that that was so if they remembered that the greater the church the greater was the void contained. A church was, relatively, in itself a cheaper thing to build than a civil building, such as a school, a house, or factory, because it did not contain various floors, partitions, etc. It was one big void, with the addition of sacristies, chapels, and so on. In cubing out a church, they would find that if they first of all cubed the church and then took the cube of the walls separately, that the cube of the void inside cost more than the walls. It seemed an absurdity, but that was the result. In regard to materials, he thought that Mr. Nicholson was again perfectly right, that they should seek as far as possible to get perfectly simple materials. In the interior of a church, for instance, they should not think it necessary, as it was thought necessary in the sixties, seventies, and eighties, to have a lot of stone. If they could not have stone in the interior of a church they could have brick, and if they had brick they would be wise to keep to brick almost entirely, making the arches as well as the walls of brick, and, in short, try and get a great brick interior. There were many fine examples of such treatment, and he remembered one in particular, at Pavia, where there was a great church with clustered columns and arches in brick, and the effect was stately and magnificent. The treatment one often saw in England was that of red brick mixed with freestone—probably Bath stone. This treatment extended to the columns, arches, screens, and in minor details, but generally the result was patchy and unfortunate. It would be better to omit the stone and have a greater use of brick, which would also be an economy. Then, again, they were not tied even to brick. Excellent results could be got in plaster as long as the proportions and masses were right. In many an old church they would find, particularly in the Southern countries—in Italy, Spain, and South of France—that the arches were nothing but square soffits plainly rendered in plaster. Possibly there was stone in the piers, but frequently they were plastered, though they had a high stone base. Some such treatment seemed reasonable and economical, and especially suitable for a cheap modern church. Architects should, where economy was so important, rely on the effect of line, proportion, disposition of light and shade in the interior, and not upon the expense of material. Of course, one naturally wanted a stone interior when expense was unimportant, for it was the finest material, and better than brick, of course; but where the cost had to be kept low brick could be used with advantage, and plaster, too, so long as the plaster was not too smoothly rendered, as it was apt to be by the modern plasterer. As long as plaster could be got with a certain play of surface—not with an affected inequality of surface—and with a certain feeling in the handling, they could get a good result in the simplest manner, especially if they were permitted to whitewash the plaster. He was heartily in agreement in saying, "Avoid all unnecessary features." One frequently saw faults of this kind. They were to be seen in the work of a great many architects of whom one spoke with respect, as they were pioneers in the revival of church building. Those architects were so much impressed by the quality and picturesque character of certain features that appertain to Gothic architecture, and which they thought were peculiar to it, and were so absorbed in their intention to revive these forms that they lost sight of the fact that they no longer served their original purpose. For instance, such features as buttresses and flying buttresses were sometimes put where they were not needed for constructional purposes, and where they did not correspond with any internal thrust. The buttresses should be placed, of course, as a prop to resist the pressure from inside; and so with many other features. To all young designers of churches, as of other buildings, he would say: "Be careful that you know why you put in any feature. Know exactly what those features are for." Mr. Nicholson had referred to the disposition of the sanctuary, and young architects might well ask themselves, when designing a church, what those steps were for. They should not introduce this or that number of steps because they had seen that number somewhere else; but they should provide the number that would serve the purpose—whatever it might be—to take people up to the altar, for instance. He was pleased to notice that Mr. Nicholson, in referring to architects not long passed away, and whose names were so familiar to us, had taken up a sympathetic attitude, and had noticed the excellence in their work. What had been said about the excellence of the work of Sir Gilbert Scott might have been even more strongly said. They were all conscious of the faults in Sir Gilbert Scott's work, and they knew that those faults arose from the fact that Sir Gilbert had too much to do. He had on hand at one time more than one man could conceivably do, and the work had to be delegated to assistants, and many things were done which ought not to have been done, and there was an evidence of haste about some of Scott's buildings. Still, with all this—and they should not forget the time when the work was done and the amount of prejudice and preconception of people in favour of other manners and other ideas—a great deal of Scott's work showed a grasp of a distinct style and a distinct conception of what he wanted, which in themselves were excellent things. Where a man was determined to arrive at a certain result, and did arrive at that result by legitimate means, the result was worthy of respect. Men like Street, Bodley, and Sedding were in a sense Scott's pupils. Mr. Bodley was actually Scott's first pupil, and he served the curious, old-fashioned pupilage of five years, he believed, and lived under his master's own roof. Street was not articled to Scott, but he went into his office and was directly under his influence. Sedding was never in actual personal contact with Scott, but he came under his influence through George Gilbert Scott, jun., and Mr. Bodley, and got some of the effects of Scott's clearance of the ground. In regard to church building generally, we are very apt in England to perpetuate a quality which one sees in old English churches, *i.e.*, an extreme pokiness and smallness. Why English parish churches were generally smaller, on the whole, than those of European countries—particularly those of France, Italy, and Spain—would take too long to inquire into. One saw at once some of the reasons. In the Middle Ages, when these churches were built, England was a poor country, and not in close contact with Continental towns, and had to depend on rustic ideas. England was not a country of great mountains and rivers, and it had, relatively to more Southern countries, a low sky, and all these things may have conduced to a smaller order of building. In modern churches we are apt to sacrifice possible scale for other

considerations—that was to say, to spend money which might have been devoted to expanding the area of the church on features inside the building which were not, perhaps, essentially necessary constructionally. There was too great a tendency, which was not the architect's fault so much as the parson's, to fit a church exactly to a given congregation. An architect was asked to design a church for 500, 600, or 800 sittings. Those sittings and the gangways, space for organ, vestries, and possibly chapels, had to be provided, and the cost was calculated upon a setting out of the area to provide space for the stipulated number of people. This was a pity, because spaciousness in itself was a fine thing, and a well-proportioned, simple building, which was spacious and in which there was plenty of room, secured a dignity of its own which no crowded, over-pewed church could have. He agreed with Mr. Nicholson in advocating height. If one had ability one could make something of a church which was kept low, but it was almost impossible to get that effect—an inspiring effect—of dignity which came from loftiness. In that respect, again, he thought we were behind builders of modern churches on the Continent. He knew of one instance of this in Holland, but it was the same in many other places, which were much less rich than many of our county towns, where were to be found poky little buildings. In England we seemed to have too much of that practical sense of exactly suiting the church to its seating requirements, and allowed nothing for poetry, dignity, and such qualities. These were qualities which were essentially desirable in a church. He would like to refer to a matter which he did not think Mr. Nicholson had referred to—of an ancient plan which had been adopted and had become a modern plan for building a great church, and which seemed to answer better than the mediæval plan for modern uses, *i.e.*, a church with a single span but with internal passages—that was to say, with the internal buttresses pierced to form aisles. That was a plan most admirably adopted by Messrs. Bodley and Garner in their Church of St. Augustine at Pendlebury. The plan gave a view of the altar to every one in the church, and the aisles in the buttresses could be used by people going to and from their seats. There always seemed something uncomfortable about the plan of nave and side aisles terminating against a dead wall. In old churches there was almost invariably an altar at the east end of each aisle, which gave interest and purpose to the aisle; but now, if one provided an aisle for seating, it was not only not a good arrangement for that purpose, because the piers of the nave arcade divided it from the nave and spoilt the view of the chancel for a good many people and prevented a good many people from hearing, but the blank wall at the end of the aisle seemed purposeless. If the aisle was broad, and was terminated by a morning chapel, it then became a sitting space which upon occasions of festivals, when the church was crowded, was most useful, but in other circumstances it was not a reasonable arrangement. A prevalent vice amongst architects of modern domestic work seemed to be what he would call "cottaginess," and the attempt to tickle the fancy by odd little bits of quaintness. That was, to an extent, balanced in ecclesiastical work by a certain childish playfulness which was extremely unpleasant. He thought that the archaic, archæological severity of some of the architects referred to was preferable to anything like this frivolity—this desiring to be original in a church. There was a tendency, also, which was to some extent balanced in domestic work, to be provincial and parochial in dealing with a church in a big town. If they had to deal with a church in a large town the building should be made a civic building, and they were doomed to disappointment and non-success if they attempted to give to such a building the effect of a country building. They must have observed that a great many churches in the fifties, sixties, and seventies erected in the suburbs of London were made to look as much as possible like country churches, built in Kentish rag rubble and materials of that sort, which were quite unsuited to the atmosphere of London. He knew of such buildings at Kensington. These buildings, erected in city squares, and with grimy houses around them, had an uncomfortable and unreal effect. If a mere blank, plain effect suitable to the atmosphere and surroundings of London had been substituted, and money wasted on crockets, etc., had been spent on the interior, the results would have been much happier.

Mr. A. Needham Wilson, in seconding the vote of thanks, said he would like to endorse what Mr. Warren had said about this valuable and instructive paper, and on the admirable manner in which it had been read. The historical references Mr. Nicholson made, showing how the various schools in the revival of Gothic architecture were raised, had added considerably to the value of the address. It was most interesting to see how the rise of modern ecclesiastical architecture had followed the flow of English church life. When English church life was at its lowest, the plainest, squarest, ugliest building seemed to have suited the requirements of the day, but with the church revival and the demand for a more ornate ritual there certainly seemed to come the demand for a much more elaborate setting. He thought they ought to ask themselves what was the purpose of a church. Was it merely to provide a cover for an act of worship? Or was it for some further purpose? All of them, he thought, felt on entering a mediæval church a sensation of awe, frequently a sense of mystery, a creation of emotion—and that sense must to a great extent influence the act of worship. He felt that in a great many modern churches that spirit or effect was absent. Mr. Nicholson had touched in a very lenient manner on the architecture of the bygone masters, and no doubt he was right in doing so; at the same time, possibly, there were matters which might have been referred to as warnings to the young architect. Mr. Nicholson had mentioned Butterfield's insistence on certain principles. He (the speaker) did not think he would be going too far if he suggested that Butterfield's architecture suffered frequently from his insistence on those principles, and that he produced churches which—he did not want to use a harsh word—were somewhat cast-iron in appearance; and the lesson might be carried further if one remembered what Viollet-de-Duc, with all his profound knowledge, did in France, where he was able to carry his principles to a most alarming degree of "cast-ironness." At the same time, he thought we might congratulate English architects on the fact that we produce immeasurably superior church architecture to what our French brethren do at the present time. In reference to Sedding's work, beautiful and grand as it is in many respects—and he often thought that Sedding, almost more than any of his contemporaries, managed by his buildings to influence the worshippers with a sense of reverence—he could not help feeling that it was a little disappointing. In the concrete, the work of Sedding was, as compared with his work as shown by his drawings, somewhat disappointing. The drawings were infinitely beautiful, but when they were carried into execution some of the charm was lost. Church architecture had developed at a great rate. We seemed to have left behind—and it was a good thing, too—most of the traditional methods, and to have handed those methods over to our Dissenting brethren. That was certainly so in the matter of aisles, which, as the last speaker said, should be practically abandoned. It was to be hoped that the modern tendency of ecclesiastical architecture was towards vastness, breadth, and severity in the actual carcass of the building. We should trust more to the work of the artist—the glazier, the carver, the weaver, or the metal worker—to give our churches that embellishment which would conduce to that spirit of worship he had referred to. In how many modern churches did one get that sense of an aid to devotion—that indefinable sense which one could not help feeling in the ancient buildings? How many modern churches impress the worshipper in that way? He should like to endorse the remarks of the last speaker as to the chancel, and having one roof from end to end of a church. That would enable them to get an increased width for the chancel, many modern churches being extremely small in that respect, and excessively bare and cold and much overlighted. He was not sure that a great east window was the best finish to a church. The treatment one saw in some churches of a large dossal with side lights north and south was much more effective. There had been a great change in ideas in church matters, and the pulpit could no longer be said to be the central feature of a church, and it was a mistake to apply the principles which had probably passed away. We had passed the time when church architects could express their ideas in mere archæology. There was another matter he would like to touch upon, and that was Mr. Nicholson's suggestion for only partially filling the church with pews or benches. In many of the mediæval churches in the Eastern counties the porch in some instances was in the middle of the nave, and the buildings were not seated west of the porch. Originally, except in certain cases round the pillars, none of these buildings were seated at all, and when done so early in the fifteenth century not west of the porch. There was one feature which was overlooked in modern town churches, and that was a cloakroom. Why that should not be provided he did not know. It was most inconvenient to carry a wet mackintosh and umbrella into a narrow seat—the limit of width allowed by the Incorporated Church Building Society was about 2 ft. 9 in., he believed. Such accommodation did not allow for umbrella, mackintosh, and that nuisance, the silk hat.

Mr. G. H. Fellowes Prynne said that Mr. Nicholson had very rightly begun a short *résumé* of the church architecture of the past century with a little insight into the deadness of religious art—a deadness which one could hardly conceive. When one went into some of these churches—some of the unrestored churches—and found them pewed and furnished in the way they were, one could not feel surprise at meeting that sentence: "How dreadful is this place!"—a sentence which he had seen on three churches which he had been called in to restore. Surely when one looked back to the beginning of last century and saw some of these imitation pagan temples, one could not be surprised that educated people felt the need of something better, and that the revivalists, who were men stirred up by Rickman and afterwards by Pugin, should try to get some of the beauty, even though it was mere copyism, of the beautiful mediæval churches and cathedrals they saw throughout the land. That was an excuse for them if one were needed. The mere copyism which seemed to have taken place at the beginning of the revival was often terribly bad, but the movement gradually took shape under good men like Scott, whose work was incomparably better than that of his immediate predecessors. Though one could not say that one liked the hard and fast lines of many of his works, yet Scott seemed to lay the foundation, as Mr. Warren said, of modern church work. We were too apt not to read history as it is written—not to see the great, though gradual, progress which had taken place. There was another school which said, "Build *de novo*," but he did not think that poetry, music, or literature had ever developed in that way. Those arts had been trying to find the good points in other work, and building on that. He admired the proportions of the beautiful church by Butterfield in St. Margaret-street, especially when he remembered the time when it was built; and he greatly admired the spirit which Butterfield showed in his earlier work. He agreed with Mr. Wilson in saying that the fault of Butterfield was his consistency in pursuing one straight line and never deviating from it; and that tendency was carried out to the end of Butterfield's life. It almost seemed—he would say it reverently, for he knew and respected the man—that Butterfield worked almost selfishly in the work he did and in the accumulation of his sketches and studies for the use of no one but himself; for all were destroyed on his death by directions left in his will. The work of Street, Pearson, Brooks, was not mere copyism—we were so fond of that word; at least, our Classic friends were—for there surely was an individualism in these buildings. Much of the detail was purely mediæval, but in such a church as Sedding's at Sloane-square there was individualism, and again at St. Augustine's, Kilburn. That was a grand modern church, which was greatly to be admired. Such buildings as these could not be called the work of mere copyists. If there was one disappointment about the paper it was as to the practical part of it. Architects had to deal with a very practical side of church building at the present day—with such matters as heat and ventilation, which were essentially necessary, however uninteresting, and were a constant subject of complaint with so many people. Of course, spaciousness helped in regard to ventilation, and it prevented churches getting overheated with poisonous gases. But

surely there was a great need for treating these points in a practical manner. All public buildings were now being ventilated and heated properly and scientifically, and much as we loved the traditions of the past, we must not forget such practical issues, which were ignored by too many church builders. As to the smallness of our churches, that was certainly almost a national characteristic, and it was not peculiar only to our churches. There was a smallness about our public buildings which, compared with other nations—Belgium, for instance—was a disgrace to us as a nation. As to the double aisles—the processional aisles, he did not suppose that Mr. Nicholson or the previous speakers would wish to do away with the cruciform shape of the church. That being so, the transepts seemed to be extremely useful in conjunction with processional aisles—first, as forming a junction with aisle and chancel; and secondly, as forming a nave to the morning chapel. A transept also gave a better opportunity for allowing an organ to be heard properly, and not to be utterly boxed away. But when they came to the question of the organ space there was scope enough for a separate discussion. Many of our churches were over-organed rather than under-organed, and one felt that organs in the seventeenth and eighteenth centuries had been made too much of, often taking up too much space and too prominent a place, sometimes even taking the place of the rood. One could not be surprised at our former architects saying of church architecture:—

> Taste and Art, rejecting Heathen mould,
> Shall draw their types from Europe's middle night,
> Well pleased if such good darkness be their light.

He warmly sympathised with the remark made by Mr. Wilson, *i.e.*, that in the Middle Ages something seemed to lift men's minds to a higher plane, and that the men who designed did so with a feeling of and for symbolism. Symbolism entered into almost every detail they drew—even into the steps of a church and in the position of windows. The influence of that work was felt by those who worshipped, and the more of that spirit we could get back amongst us the better for our churches. He could not help thinking of Keble's words—

> Three solemn parts together twine
> In harmony's mysterious line;
> Three solemn aisles approach the shrine.
>
> Yet all are one.

The Chairman said that the paper and discussion had both been very interesting, and they were indebted to Mr. Nicholson for his careful and instructive paper. The problem of building churches stood entirely by itself amongst the problems with which an architect had to deal, and it was one which called for quite different qualifications from those necessary in more practical every-day matters. A church could not be successfully erected by any architect unless he had an exceptional feeling of devotion and religious feeling, and also a strain of poetry too. As to the style of a church—whether it was in the Gothic or the Classic, or Greek or Roman—that did not matter much really. There was nothing, so far as he knew, to prevent a man thinking finely in Gothic, Classic, or any other style; if the essential qualities were there in the building it would appeal to one quite as eloquently, whatever the style it was designed in. A great deal had been said about Sedding's churches. Almost all Sedding's churches were Gothic, but there was one, a very simple one, which was in Clerkenwell, which was not Gothic. Although it was very simple it appealed to him quite as much as the more elaborate Gothic churches by Sedding. A much larger church, and an extremely fine building—an example of what a modern church should be—was St. Stephen's, Walbrook. One of the essentials of a church, but one of the things almost always lost sight of in modern churches, was that it should be designed in such a manner that it would conduce to a sense of reverence and devotion. One of the first means of producing this was an absence of strong light. Almost every church was too light; so much light was quite unnecessary. One did not want to see in a church, but to hear. In nearly all churches where the light was obscure he had felt a greater sense of mystery and devotion than in the modern churches where there was so much light. He sympathised with Mr. Wilson's remarks as to the dark sanctuary. The large east window of the English church did not seem to be necessary, and in most Roman churches there was a dark blank east end, which seemed to be a finer effect than a great mass of light. He would almost say, Don't have any windows in the sanctuary at all, not even on the south or north walls. Much had been said as to copyism and following tradition. It seemed to him that in designing modern churches tradition must be followed, but where it became an evil was when it became copyism. One must go forward; tradition, if observed and followed intelligently, would lead to progress, and that was much more solid and substantial than straining after originality. One of the great difficulties in designing modern churches was the demand for a large, unbroken space for congregational purposes. If one followed the Gothic tradition this was especially a difficulty—in the way of getting proportions which were necessary to that particular manner. As to great height, that was another essential which presented less difficulty in Renaissance buildings.

The Chairman announced that the next meeting will be held on the 20th inst., when Mr. H. M. Cautley will read a paper on "Farm Buildings."

The meeting then terminated.

## THE ARCHITECTURAL ASSOCIATION DISCUSSION SECTION.

The second meeting of this section of the Architectural Association was held at 56, Great Marlborough-street, W., on Wednesday, November 4, Mr. J. H. Pearson in the chair, when a most interesting paper on "Cast Iron," with special regard to its decorative possibilities, was read by Mr. Henry Longden, who dealt with his subject in a thoroughly practical manner. Attention was chiefly directed to the possibilities in the way of the more general use of decoratively treated castings for grates and fireplaces. Several examples of such fireplaces were exhibited, alongside of their models in wood and in gesso on wood which had been used in their production. Old examples of fire backs and dogs, chiefly from the Sussex foundries of the sixteenth and seventeenth centuries, were also shown. From these examples Mr. Longden took his text, pointing out the nature of the processes employed in the several instances. The modern castings were shown to be of lower relief and finer finish than the old ones; more perfect, certainly, and, as the author claimed, more beautiful, although there was not a unanimity of opinion among members on the latter point. But, as the author pointed out, the old fire-backs were in deep cavernous recesses, and might well be coarse in finish and bold in design, whereas the modern hob grate, with its cheeks and wings, is all in the light, and therefore the flat and finer treatment was more appropriate. Reference was made to the examples of hob grates, lattices, etc., of the beginning of the nineteenth century. These were always designed with a knowledge of the shrinkage of the metal. Various examples of cast-iron railings, such as those to St. Paul's Cathedral, and elsewhere in London and the provinces, were referred to, and their merits or otherwise pointed out. For modern work, the railings designed by Butterfield at All Saints', Margaret-street, were noted as being particularly worthy of study.

In the discussion which followed, and in the remarks of the Special Visitor (Professor W. R. Lethaby) especially, much interesting and valuable information was brought out, and suggestions made for consideration in regard to the possibilities of a new future for cast iron. But, as Mr. Lethaby pointed out, more exact knowledge on the behaviour of iron under various out-of-door conditions and comparatively as regards protective treatment, ought to be obtained experimentally, and duly tabulated for our guidance. It was also thought we might learn much from the methods of the East. A plea was put in by more than one speaker for a better mutual understanding as between the architect and the founder, and lamentations were heard as to the artistic failure in so many instances of the ironwork by our public bodies.

Hotel Cecil v. Savoy Hotel.—The dispute as to ancient lights between these two hotels has been, we understand, settled on the eve of the hearing, and the case will not now be brought before the Courts. The chief architect experts engaged were:—For the Hotel Cecil, Mr. I'Anson and Mr. Pilditch, with Mr. Sawyer; and for the Savoy Hotel, Mr. Gruning and Mr. Collcutt.

## MAGAZINES AND REVIEWS.

In the *Quarterly Review* the title "The Reign of the Engineer," applied to an article by Professor Armstrong, is rather misleading, as he includes under the term "all who apply science to practical uses." The article is really one on the importance of a higher standard of technical education in England. In saying that many important industries in this country have failed or are failing owing to lack of scientific training on the part of manufacturers, Professor Armstrong limits himself to indicating that what the leaders of industry require is not to be themselves scientific experts, but to have sufficient acquaintance with scientific principles and methods to be aware of the value of science in industry. Much in Professor Armstrong's article is wise and forcibly put, but it is spoiled, and its effect on some minds will be weakened, by the implied want of recognition of any value in University training except of a technical kind. Technical education is most important for national prosperity in a commercial sense, but it would not atone for neglect of higher intellectual culture. The other articles in the number, some of them of great interest, do not come within our province for reference or criticism.

The *Art Journal* contains an illustrated article on the work, as a painter-etcher, of Mr. W. Monk, some of whose works in another medium—washed drawings in black and white, will be remembered by our readers as having appeared in this journal—among others an excellent drawing of old Kew Bridge, and one of "Somerset House before the Embankment." An article by Mr. Lewis Luck, under the rather vague title "The Counsel of Philip Gilbert Hamerton," seems really to be written to accompany some views of Hamerton's surroundings at Loch Awe and Pré-Charmoy, which it is interesting to have, since everything in connexion with Hamerton is interesting. The moral intended in the article seems to be that Hamerton wrote criticism for artistic truth and not in view of his own personal likings or dislikings, which is no doubt perfectly true—Hamerton was in every sense a noble character, affording a lesson which, if necessary, ought not to be so. The article is illustrated at the close by a print from one of those curiously unsatisfactory etchings of Hamerton's which showed that a man may have the clearest and sanest perception about an art, and yet be unable to illustrate his own ideal. The history of these efforts in etching, and of the disappointment they caused to his devoted wife, who saw that he was striving after something he could not accomplish, is pathetically told in Hamerton's biography. Mr. Leslie and Mr. Eaton's joint essay on the Royal Academy in the *Nineteenth Century* recalls this month the name and work of Bailey the sculptor, who seems to have been unfortunate in his life and unhappy in his temperament, but whose two statues of "Eve at the Fountain" and "Eve Listening to the Voice" are certainly among the very best things which English sculpture of that period produced, and ought to keep his name alive. The other artists commemorated are Richard Cook, W. Daniell, R. Reniagle, and Sir Jeffrey Wyatville; none of them any longer names to conjure with. Wyatville's design for a mansion for the Earl of Yarborough, of which an illustration is given, is for all its best points indebted to Inigo Jones' Whitehall Palace design, a fact which ought to have been mentioned, but neither of the writers of the essay are architects. An article on Stevens, by Mr. T. Morris-Moore, with some personal traits and facsimiles of letters and sketches, throws some interesting light on a great figure in modern English art.

The *Christmas Art Annual* published in connexion with the *Art Journal*, and usually devoted to the illustration of the life and work of one particular artist, takes for its subject this year Mr. McWhirter. The letterpress is by Archdeacon Sinclair, who treats his subject very well, combining the special notice of the artist with some very good remarks on landscape painting generally, arising naturally from the consideration of the expression of the art in Mr. McWhirter's paintings. The illustrations are well selected to give an idea of this artist's really wide range of subject; this was desirable, because there is no doubt that he has repeated rather often the scheme of a quiet landscape with a birch tree in the foreground, so that this foreground tree has become rather associated with his name; the

number might easily have been filled with illustrations of this class of subject; but as it is, there is enough in the collected illustrations to show that their author is a much more all-round creator in landscape than has been quite realised. The colour-printed illustration which forms the frontispiece shows, however, the birch-tree picture in its best form—"A Winter Fairy" in a snow landscape.

Perhaps the most interesting article in the *Magazine of Art* is that of Professor Herkomer on "Portrait Painting," in which he goes into what may be called the philosophy of the art—the different possible methods and points of view of the painter in regard to his art, his relation to his sitters, etc. Those who think of having their portraits painted by an eminent artist should read this article; it will give them a better notion than many sitters possess of the methods and the difficulties of portrait painting, of what the artist looks for from his sitters, how they may help him to a good result, and what they have a right to look for in the result—for expectations are sometimes unreasonable. The Editor's article on Whistler is both very interesting, for its personal traits, and very fair and well balanced. We gather from it (though not expressed in so many words) the opinion that Whistler was potentially a very great artist, who failed to make the most of his genius, through waywardness and a certain eccentricity of aim. We do not feel quite sure, however, whether the kind of art which he did produce was not really what he was best fitted for; whether he would not have failed comparatively if he had tried to paint highly-finished works instead of confining himself to the broad and suggestive treatment of a simple idea. The number contains an anonymous article on the recently-contested subject of the Academy and the Chantrey bequest, apparently written to put the matter from the Academy point of view. The writer certainly succeeds in showing that the Academy was left a very wide liberty of action by the terms of the bequest, and that it would be very difficult for the law to touch them in any way as to their past action, since everything was left to their "opinion," and they would only have to say that in their opinion the works they had purchased were the best available. The fact that the opinion of many persons outside the Academy does not coincide with theirs would after all only be a matter of opinion, on which the law could hardly pronounce. Our conviction is not at all altered—viz., that they have not bought all the best works they might have bought, and that they have shown far too great a disposition to buy the works of their own members. The writer of the article throws a new light on Chantrey's intention in stipulating that the works should be "executed in England," in suggesting that art in England was languishing at that time through the fact of the residence abroad of the ablest artists, and that he wished to counteract this absentee-ism. Mr. Aymer Vallance commences a series of articles on the subject of "Good Furnishing and the Decoration of the House," the first article being occupied with "The Hall." We quite agree with him in thinking that "one of the aims of the reformer should be the restoration of the hall to somewhat of its past dignity and importance." The suggestions made are in general what we should coincide with.

In the *Architectural Record* (New York) Mr. Kenyon Cox's article, "New Light on Michelangelo" is really a review of Mr. Berenson's "The Drawings of the Florentine Painters," considered more especially with reference to the existing drawings of Michelangelo's design for the tomb of Pope Julius, which, Mr. Berenson argues, represent only a late attempt to realise the design from Vasari's and Condivi's descriptions. We should prefer to think so, for it is not a good design considered as a whole. It is pretty certain that the "Moses" was to have formed part of it, but the figure sketched on the drawing differs very much in proportion and design from the actual statue. The author remarks, and we think with truth, at the close of the article, that the fragmentary character of Michelangelo's sculpture designs was in great measure owing to his own change of ideas, and that these works could not be carried out within reasonable time except by the collaboration of other hands, and no one could collaborate with him. Had not the Pope commissioned the Sistine ceiling to be executed by the shorter method of painting, the writer adds, we should not have had one complete decorative scheme by Michelangelo. Signor Melani contributes an article on "Modern Architecture in Italy," and poor stuff it seems to be; the most satisfactory thing in the illustrations is the sculptured figure of a monument to the dead, by Signor Pogliani. Professor Goodyear has an article to show, as he has endeavoured to show before, that all the variations from the perpendicular in St. Mark's, Venice, resulting, as the average architect must suppose, from settlement in the building, were consciously and deliberately contrived; in which he is supported with great and admiring enthusiasm by Signor Saccardo, engineering architect to St. Mark's. Those who compare the theory with the illustrations will probably come to the conclusion that this is a kind of architectural fallacy on a par with the marvellous discovery of Street, that the pavement of the church was out of level by intention. Lucubrations of this kind may amuse both the writers and (in another sense) the readers of them, but they will hardly commend themselves to sane critics. Messrs. Balfour and Turner's church in Davies-street is the subject of an article by Mr. Herbert Mansford, who thinks, and we agree with him, that so original a building deserves to be more widely known. The technical appendix at the end of the number contains the results of some interesting inquiries and experiments on the preservation of materials, extracted from the Proceedings of the American Society of Civil Engineers.

In the *Berliner Architekturwelt* the most interesting thing is a very unusual design for a country house, by Herr Emil Schaudt (Berlin); a country house treated on rather Classic lines, with a semi-circular loggia on doric columns at one end of it, flanked by masses of wall, each bearing a statue at its termination; but it is all treated with a certain modernity of feeling and character. We have often thought that a country house might be thus treated on quasi-Greek lines, and it is something at all events far superior to the contorted half-timbered erection which forms the usual ideal both of French and German country houses.

The *Architektonische Rundschau* contains a curious collection of eccentricities, of which the only one worth special attention is the Villa Stollwerck at Cologne, by Herr Bruno Schmitz, of Charlottenburg (Berlin). This is a rather remarkable and original production in what may be called *rococo* Classic. Some of the detail is odd and rather grotesque, but as a whole it is a remarkable architectural conception.

The *Art Workers' Quarterly* contains a valuable article by Mr. Silvester Sparrow on "The Stained Glass of the Future," which however, is largely concerned in the making of the stained glass of the present. There is a good deal of information in regard to practical methods, and the artistic principles propounded are sound and true.

In the *World's Work* are articles on "Cold Storage and Ice-making" and on "The Scottish Granite Industry," only however of a popular kind; the first named one, though giving a view of the new Cold Stores at Southampton, gives no information as to what is required in the planning and construction of such a building. "The Story of Irish Lace" sums up the history of a national industry, illustrated by three or four beautiful specimens of work.

Very different are the articles in *Public Works*, which are not written for the million but for technical readers who want technical information. The article on the "Profit Side of Refuse Destruction," by Mr. W. Naylor, A.M.Inst.C.E., is an essay going fully into the subject, illustrated by a number of diagrams, and crowded with statistics and figures. "Cheap Dwellings in Paris," by M. Paul Strauss, Member of the French Senate, gives a great deal of information as to what is being done in Paris in this class of house, including among the illustrations plans and view of the Rue Jeanne D'Arc houses, by M. Guyon. The plans are better than the elevation, which has the same formal and uninteresting character as the usual type of French Lycée, with ornament which does not interest one and does not make the building attractive. A much more home-like and attractive looking exterior might have been produced at the same cost; but modern French architecture is much more at home in the palace than in the cottage. Mr. E. Vicars, of the British Legation at Athens, gives an excellent account, very fully illustrated, of the restorations and repairs on the Acropolis at Athens. Other articles are, on the "Ponts et Chaussées" Department at Paris, by Mr. Henry Chabel, a French engineer; and on the Hôtel de Ville of Tours, by M. Henri Mazet.

In the *Pall Mall Magazine* Mr. Wilfred Meynell's article on Whistler is a very good and acute one, and should be read by some of those people who want us to regard Whistler as a great and down-trodden genius. Mr. Meynell, while he evidently has full appreciation of Whistler as an artist, indicates plainly enough his conviction that in his rubs and quarrels with the Philistines of the day, including (in the artist's estimation) the Royal Academy, Whistler was in many if not in most of the cases the person chiefly to blame. Among the illustrations to the article are two from *Once a Week* (1862), interiors with figures, which we suppose are Whistler's or they would not have been inserted here; but no one would guess the authorship in the light of his more recent works.

The *Monthly Review* contains an article written in a very earnest tone, by Mr. Ralph Neville, on "Garden Cities." The keynote of the article is that town life is degenerating our race physically, and that we have to provide means for enabling the artisan to share with the agriculturist the hygienic advantages of country life. This movement is only in its infancy; we hope something may really come of it; it is at present an experiment, but one well worth trying.

*Scribner* devotes a good many pages to "John S. Sargent," an article by Mr. Royal Cortissoz, pitched, as all these American articles on American-born artists are (Mr. Sargent can hardly be called an American artist—he is a French one), in a vein of rather tumultuous admiration, in this case justifiable. It is rather curious to be reminded that Mr. Sargent is a pupil of M. Carolus-Duran; we can hardly imagine two names in art that call forth more different associations.

The *Century* contains an article on the fascinating subject of "Italian Villas and their Gardens," which we gather is to be continued as a series, this first number dealing specially with Florentine gardens. The first point in the introduction is that Italian gardens do not exist for flowers; there may indeed be no flowers in one which is nevertheless a very effective specimen of its type. It is a laying out of ground in reference to the architectural lines of the house. We quote the following from the summary of the subject:—

"Any one who studies the old Italian gardens will be struck with the way in which the architect broadened and simplified his plan if it faced a grandiose landscape. Intricacy of detail, complicated groupings of terraces, fountains, labyrinths, and porticos, are found in sites where there is no great sweep of landscape attuning the eye to larger impressions. The farther north one goes, the less grand the landscape becomes and the more elaborate the garden. The great pleasure-grounds overlooking the Roman Campagna are laid out on severe and majestic lines; the parts are few; the total effect is one of breadth and simplicity.

It is because, in the modern revival of gardening, so little attention has been paid to these first principles of the art that the garden-lover should not content himself with a vague enjoyment of old Italian gardens, but should try to extract from them principles which may be applied at home. He should observe, for instance, that the old Italian garden was meant to be lived in—a use to which, at least in America, the modern garden is seldom put. He should note that, to this end, the grounds were as carefully and conveniently planned as the house, with broad paths (in which two or three could go abreast) leading from one division to another; with shade easily accessible from the house, as well as a sunny, sheltered walk for winter; and with effective transitions from the dusk of wooded alleys to open flowery spaces or to the level sward of the bowling-green. He should remember that the terraces and formal gardens adjoining the house, that the ilex or laurel-walks beyond were clipped into shape to effect a transition between the straight lines of masonry and the untrimmed growth of the woodland to which they led, and that each step away from architecture was a nearer approach to nature."

*Harper* contains an article by Professor Flinders Petrie on "The Ten Temples of Abydos." The main information contained in it has already been before the public in other forms, but the article is a very graphic one, with some illustrations which add greatly to its interest. "London from a 'Bus-top," by

Mr. Sydney Brooks, may interest those who like to know how others see us.

*Knowledge* is interesting for two articles on Mars and the much-vexed question of the real meaning of the markings on his surface; one by Mr. Antoniadi, the other by Mr. Walter Maunder. Both of them tend towards the conclusion that the canal-like straight lines are mainly an optical delusion from various causes. To which one may reply—why then do we not see similar lines on the disc of the moon or of Venus?

The *Cornhill* contains an article by the Rev. John M. Bacon—"Midnight in Cloudland: an Experiment." The object of the nocturnal balloon ascent described was to study the subject of the distance at which sounds could be heard, and the apparent direction of their source. Some of the results were curious and unexpected, but we must refer the reader to the article for particulars.

We have received the *Antiquary*, the *Revue Générale*, and the *Gentleman's Magazine*.

## THE ARCHITECTURAL CONGRESS AT MADRID.

The International Congress of Architects at Madrid is to be held from April 6 to April 13 next year. The programme of the proceedings is in course of preparation, and those who wish to contribute papers are requested to send, as soon as possible, the titles and subjects of their papers to the General Secretary at Madrid, accompanied by a brief *résumé* of the purport and conclusions of their papers (preferably in French); such *résumés*, if they arrive in time, will be printed in the programme.

The Spanish railway companies will grant a 50 per cent. reduction on ordinary fares to all members of the Congress; the Portugese companies the same; and the "Compagnie de Navigation de la Transatlantique" a reduction of 33 per cent.

Every member of the Congress will receive, with his card of membership, a list of the principal hotels and pensions at Madrid, a guide-book to the principal monuments of Spain, and a copy of the programme.

Communications are to be made to the Secretary, Señor Luis Mª Cabello y Lapiedra, architecte, Madrid.

## A FRENCH TRIBUTE TO H. W. BREWER.

The issue of *Construction Moderne* for the 7th inst. contains the following paragraph in reference to the late H. W. Brewer, under the head "Nécrologie." It is signed "Ch. L.":—

"M. H. W. Brewer, architecte anglais.—L'art anglais vient de faire une grande perte en la personne de M. H. W. Brewer, associé honoraire de l'Institut Royal des Architectes Britanniques, qui fut, pendant plus d'un quart de siècle, dans ses dessins, à la plume d'une rare intensité d'expression, le plus remarquable évocateur des ensembles d'architecture du moyen âge, qu'il s'agisse de restitutions de quartiers de Londres, d'Oxford, de Paris, ou encore et surtout, qu'il s'agisse de compositions architecturales tenant à la fois du rêve et de la critique, mais toujours empreintes d'une grande saveur artistique et d'un réel sentiment archéologique.

Tous les architectes qui lisent le *Builder* ont présentes à la mémoire les belles pages que M. H. Brewer donnait à ce journal au moins une fois par an, dans le premier numéro de janvier et s'associeront aux regrets en même temps qu'au juste tribut d'éloges payés à cet artiste par la rédaction du *Builder* et par le *Journal de l'Institut Royal des Architectes Britanniques.*"

School for Boys, Cambridge.—A new schoolhouse in connexion with the Cambridge and County School for Boys has just been opened. The building is of red Suffolk brick, and Bath stone dressings. The architects are Messrs. MacAlister and Tench, of Cambridge, and the building has been erected under contract by Messrs. Coulson and Lofts. The buildings cost about 7,500*l*. The fireproof floors are by the Fireproof Partition Syndicate; the granitic stone pavings and stairs, etc., by Mr. Royall, Cambridge; the carving by Messrs. Bradford; the tarpaving and asphalting by Mr. Josiah Smart; and the fittings by Messrs. Prime and Sons, Cambridge.

## ASSOCIATION OF MUNICIPAL AND COUNTY ENGINEERS.

A meeting of the Metropolitan District of the Association of Municipal and County Engineers was held at the Municipal and County Club, Whitehall Court, on Friday, November 6, to consider the new by-laws made by the London County Council in regard to depositing drainage plans with the Sanitary Authority. Mr. W. Weaver, C.E., of Kensington, President, was in the chair, and among those present were Messrs. J. Rush Dixon, Shoreditch, Honorary District Secretary; W. Nisbet Blair, St. Pancras; N. Scorgie, Hackney; R. H. Gloyne, London County Council; C. H. Cooper, Wimbledon; W. R. Manning, Chelsea; E. E. Finch, Bethnal Green; O. C. Winter, Hampstead; W. T. Creswick, Westminster; C. Chambers Smith, Sutton; G. T. Lakin, Finchley; F. Sumner, Woolwich; R. G. Killick, Finsbury; S. N. Glass, Chiswick; W. Harpur, Cardiff; E. Van Putten, Lewisham; H. A. Giles, Westminster; and others.

The President said the object of the meeting was to consider the new by-laws relating to the deposit of plans, sections, and particulars of drainage work. The by-laws were now in force, having been approved by the Local Government Board on August 20, 1903. In considering this subject, the borough engineers of the Metropolis, being public servants, should endeavour to facilitate the work and remove attendant difficulties, and advance in this direction would be made if some of the divergencies of practice now existing in different boroughs could be abolished, and a general system adopted for working these by-laws throughout the Metropolis, to the great convenience of builders and contractors, who at present were somewhat perplexed by the rules and procedure varying in different boroughs. In a Report which he submitted a short time back to the Kensington Council, he pointed out various points in the by-laws upon which he considered he required direction, and a committee, after careful consideration, submitted a Report which was adopted by the Borough Council, and upon the resolutions and directions contained in that Report the work connected with the new by-laws was now carried out. The Report was as follows:—

*Report of the Public Health Committee.*

October 20, 1903.

We have had before us a letter from the London County Council, forwarding copies of by-laws made by them under Section 202 of the Metropolis Management Act, 1855, and the Metropolis Management Acts Amendment (By-Laws) Act, 1899, requiring the deposit of plans and sections of drainage works, and intimating that the same have been approved by the Local Government Board, and are now in force.

We have also had before us a Report which has been prepared by the Borough Engineer, requesting instructions as to the procedure to be adopted in carrying out the new by-laws, and having referred the matter to a subcommittee for consideration, we have now received the following Report from such subcommittee, viz.:—

"October 16, 1903.

We beg to report that we have had before us, pursuant to the reference by your committee of the 6th inst., the Report of the Borough Engineer upon the by-laws made by the London County Council under Section 202 of the Metropolis Management Act, 1855, and the Metropolis Management Act Amendment (By-Laws) Act, 1899, as to the deposit of drain plans.

In this Report the Borough Engineer requests the instruction of your committee as to the procedure to be adopted in carrying out the new by-laws which have been approved by the Local Government Board and are in force.

The first point upon which the committee are asked to give a decision is as to whether the Borough Engineer shall have similar power vested in him with regard to the granting to applicants of permission to proceed with drainage works as that hitherto exercised by him under Sections 75 and 76 of the Metropolis Management Act, 1855. We are of opinion that this power should continue to be exercised by the Borough Engineer, and we recommend accordingly.

A further question which has arisen is as to how a distinction shall be drawn between cases where By-law 1 applies, and those coming within the definition laid down by By-law 2, the former by-law dealing with cases of construction, while the latter deals with partial construction, additions, entire or partial reconstructions and alterations of drainage systems, and this point must, we think, be left to the discretion of the Borough Engineer.

With regard to By-law 3, which provides that, in any case in which an alteration of the drains must be carried out at once, a notice in writing of any such proposed alteration may be given to the Sanitary Authority in lieu of the deposit of plans, etc. (the plans and sections being deposited within two weeks of the commencement of the work), we are of opinion that a definite rule should be laid down for the guidance of the Borough Engineer as to what shall be taken to constitute urgency.

We recommend:—That urgency be admitted in the following cases, viz.:—(*a*) where the work is required by sanitary notice, and (*b*) where a case of illness is known to exist in the house, or where a case of infectious disease has been traced to the premises; and that in all other cases the Borough Engineer be instructed, where urgency is claimed, to require the deposit of a sum of 2*l*. under licence prior to carrying out the work, such sum to be returned upon plans, etc., being duly deposited.

We further recommend:—That in the event of failure to deposit the plans, sections, and particulars required by the by-laws, previous sanction having been given to the carrying out of the work as a matter of urgency, the Borough Engineer be instructed to have the necessary plans, etc., prepared, and to charge the cost of the same against the amount deposited by the applicant.

It being essential that the records kept by the Borough Engineer should be accurate and complete, we recommend:—That in view of the provisions contained in the by-laws under consideration the sanitary inspectors be instructed to report to the Borough Engineer the service of any written intimation or statutory notice immediately after such service, where any alteration, repair, or addition is required to any part of the drainage system of any premises of any of the adjuncts connected with the drainage system, and that the Borough Engineer notify in return to the Public Health Department which (if any) of such notices so received by him, can or may be left entirely in the hands of the officers of that department.

We have instructed the Borough Engineer to prepare and submit to your committee draft forms for the reception of drain plans, sections, and particulars as required by the by-laws.

(Signed) W. W. Thompson,
Chairman."

In obedience to the foregoing orders he required in all cases of the construction of a drainage system as a whole, and also in cases of addition to partial construction, entire or partial reconstruction, or alteration of a drainage system, all the plans, sections, and particulars required by the by-laws to be furnished. On this form he had attached a footnote, that in the event of the space allotted for the plans and sections being inadequate they might be drawn on tracing linen and attached to the form. He had also had a scale of 8 ft. to 1 in. printed, with a view of inducing persons to furnish the plans and sections to that scale. The by-laws allowed the plans and sections to be drawn to a scale of 16 ft. to 1 in., and therefore drawings submitted to that scale must be accepted, but he was strongly of opinion that all the details required by the by-laws could not be properly and clearly shown on drawings to such a small scale. With the object of indicating to the applicants the nature of the particulars required in the detailed descriptions in writing, he had printed on the form a schedule of the principal items upon which information would be required. This schedule was not considered as exhaustive, and other information supplemental thereto might be required in addition. On page 4 of the form he had had the by-laws printed, in order that the applicants might be informed of the exact nature of the requirements, and thereby obviate waste of time in the office in entering into explanations. With regard to By-law 3 dealing with alterations of drains in cases of urgency, the Council would only admit urgency in the following cases:—(*a*) where the work is required by sanitary notice; (*b*) where a case of illness is known to exist in the house, or where a case of infectious disease is traced to the premises, and in order to prevent claims of urgency being made for trivial reasons, the Council had ordered

that in all other cases claiming urgency, beyond those enumerated, a deposit of 2*l.* should be made, and if the drawings, etc., required by the by-laws are not made within the time specified he was to prepare the necessary plans, etc., and charge the cost thereof against the 2*l.*

In order that a complete record of all drainage work executed in the Borough be kept by the Borough Engineer having charge of the sewerage and drainage work of the Borough, the sanitary inspectors through the Public Health Department furnish lists of all notices served by them involving the execution of drainage work, and any of such notices, such as fixing new flush cisterns, repairing guttering, etc., which he considered unnecessary to record on his plans, he marked and returned to the Public Health Department, and leave in their hands, retaining the others for supervision by his department.

If the procedure in Kensington as set forth or improved upon commended itself to this meeting, he would recommend that the Council of the Association should be requested to address a circular communication to each of the London Borough Councils recommending the adoption of such procedure in each Borough in the interests of public convenience and economy.

On the proposition of Mr. W. Harpur, Cardiff, seconded by Mr. C. H. Cooper, Wimbledon, a vote of thanks was accorded to the President for his address.

The President said he had no wish to thrust his views down their throats, and if they could improve upon the scheme so much the better.

Mr. W. Nisbet Blair, St. Pancras, said there was one vital point which prevented the complete adoption of the suggestions put forward. The supervision of the drainage work was not in every case under the direction of the surveyor. It was successfully contended in some cases that as the sanitary inspector was the officer who discovered the nuisance, he should see to the abatement of it, and if the nuisance arose from a defective drain, he should see it put right, whether it involved the making of a joint or the relaying of a drain. In St. Pancras these matters were carried out by the sanitary inspectors under the supervision of the Medical Officer of Health. There were some paragraphs in the by-laws essential to the clear explanation of any drainage plan and to the right understanding of what was to be done; but there were some things included which could not be considered vital. For instance, in nine cases out of ten the drainage was on the basement or the ground-floor level, and there was nothing more than a bath or water-closet upstairs. That gave room for doubt whether there was any real necessity that a person should comply with Sub-section 3 of Section 1, "He shall also show thereon the position of all windows and other openings into the building, and the height and position of all chimneys belonging to the building within a distance of 20 ft. from the open end of a soil pipe or ventilating pipe." To comply with that really made it an architect's job, and he did not think such elaboration necessary. They were content with a plan such as a builder's draughtsman could prepare. If they insisted on the full and complete compliance with the by-laws as they were worded, they certainly made it almost a penalty upon the owners of small property. In the same way, the sub-section, which required the deposit in duplicate of a detailed description in writing of the intended mode of constructing, jointing, and fixing of any drain, manhole, gully, pipe, bath, water-closet, etc., was altogether unnecessary for the proper execution of the job. In the laying of a drain they did not want to describe how that was going to be laid. The fifth sub-section provided for the production in duplicate of a block plan of the premises drawn to a scale of not less than 1 in. to every 22 ft. He thought every requirement could be put on the 8 ft. to 1 in. scale plan, and that they should not require the production of a block plan. If under By-law 2 an owner was going to partially reconstruct a drain, and it could not be found that there was any plan of the actual construction, he would have to deposit the same plan as if he were working under By-law 1. If there should be a previous plan showing the drain, then a reference to the original plan would be sufficient for the purpose. In the proviso at the end of Clause 2 he saw a difficulty. It read: "Provided that this by-law shall not require a deposit of any plans, sections, or particulars in the case of any repair which does not involve the alteration or entire reconstruction of any pipe, drain, or other means of communication with sewers, or the traps or apparatus connected therewith." He could not understand the meaning of that proviso. It might be read to mean that unless the drain was reconstructed they should not do anything under By-law 2. That was nonsense, and he was unable to understand its meaning.

Mr. J. Rush Dixon, Shoreditch, thought the by-law ought to have set out that the depositor had a right to a formal notice of approval, so that he should have a record of what was before the Borough Council, and what was approved. He thought, on the whole, the by-laws could be easily administered, and he agreed it would be best if they could come to some common form of agreement as to how they should be administered, so that a builder in going to Kensington would not have to conform to one interpretation of the by-laws, and in going to Shoreditch to conform to some other interpretation. Much of the difficulty which would arise in carrying out these by-laws would be in connexion with the arrangements the Borough Councils made as to supervision. If the Borough Councils would themselves bring about some common form of supervision, so that the borough surveyors or the sanitary inspectors should supervise them, he thought it would be an easy thing. In Shoreditch the plans for new drains and reconstruction of drains were sent in to the surveyor. He put them before the Works Committee, and after they were approved the Sanitary Department were given the duty of seeing that they were carried out. He was one of those surveyors who thought that everything should be under the borough surveyor, and he should have the necessary staff in the way of drainage inspectors to see the work carried out. The owner ought to have some acknowledgment that he had complied with the by-laws and his plans had been approved, and some protection by the possession of the duplicate record in the same way as the Borough Council would have a record of it.

Mr. Van Putten, Lewisham, said the practice in his Borough was for the surveyor to have charge of the whole of the drainage work underground, and the medical officer everything above ground. He was of opinion that the plans should be drawn on some durable material, and if a uniform system could be adopted by which the whole of the surveyors in London would refuse photo prints, it would be a step in the right direction. He contended that the requirement for fifteen days' notice was in direct contravention of the Act of Parliament which said seven days. Then, he asked, was it possible to enforce the payment of 2*l.* by an applicant? In nine cases out of ten they would get it, but in the tenth case they would get a man who would refuse, and if they could not enforce it, it would be made ridiculous.

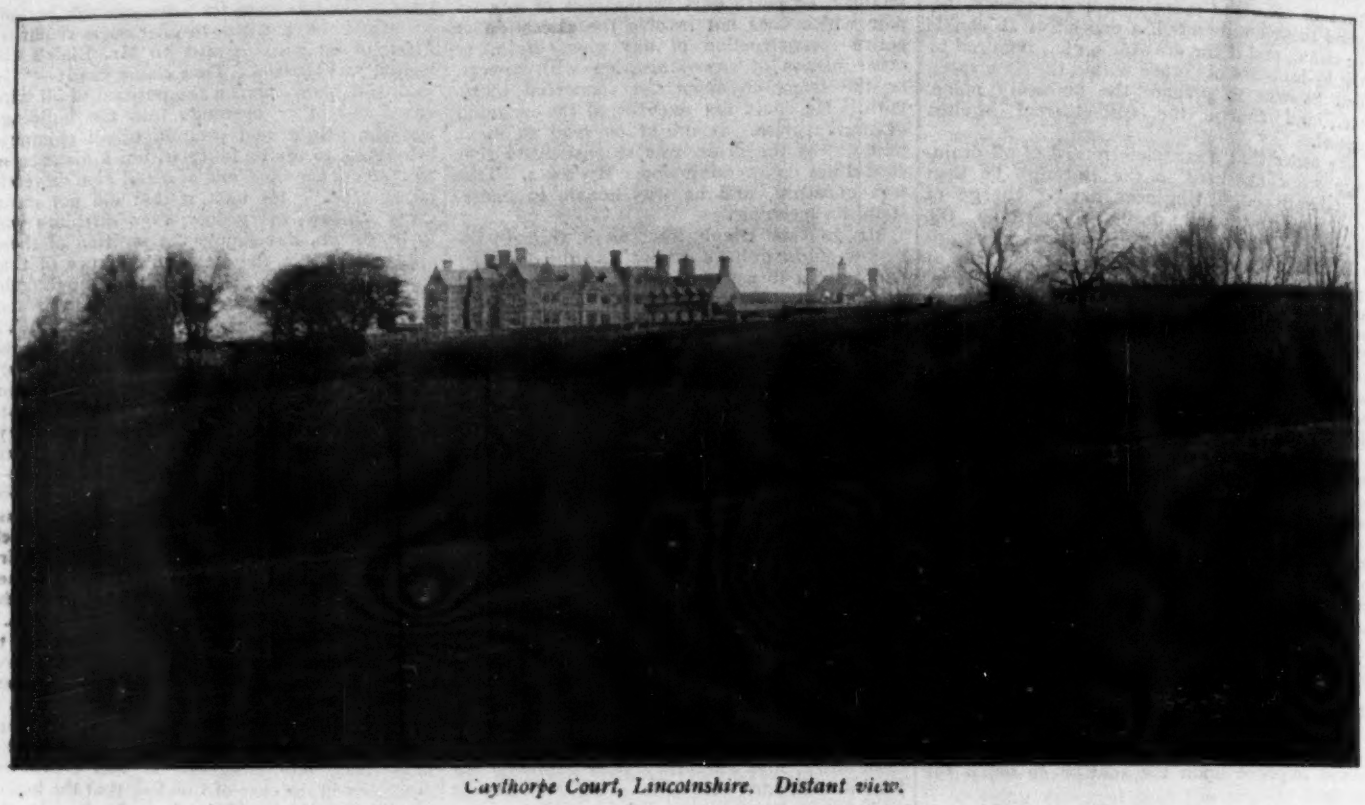
Mr. O. Winter, Hampstead, said the practice in Hampstead was that the Surveyor's Department had the supervision of all new drainage work; the plan was also seen by the Medical Officer of Health. The Medical Officer of Health's Department received the plan for alterations of drainage work of existing property. That plan was also seen by himself, and he submitted it to the committee, but the work was supervised by the sanitary inspectors, and he had no further control over it. It seemed to him, if they were to protect themselves, they must insist upon pretty full plans being provided. They had recently had a case where, acting upon the advice of the Town Clerk, they had executed extensive drainage work to carry the rain water of two houses. Then it seemed to him it was an advantage that the Local Authority should have an idea of the character of the buildings which were to be erected. They had some people of an aesthetic frame of mind, who were much upset by certain buildings which destroyed the amenities of a district. If they could get some idea of the character and extent of the building before it was constructed, it would be useful to them as a Council, and might lead to negotiations by which the pleasant features of a district might not be seriously interfered with.

Mr. Gloyne, London County Council, said that being a London County Council official it might be thought he was interested more on one side than the other, but having had to do with the execution and carrying out of by-laws in the provinces for a considerable period, he might be entitled to offer some remarks. First of all with regard to Mr. Blair's objection to Clause 3. That clause read:—"He shall also show thereon the position of all windows and other openings into the building, and the height and position of all chimneys belonging to the building within a distance of 20 ft. from the open end of a soil pipe or ventilating pipe." He took it that did not mean every window, every door, every fireplace was to be shown, but simply the position of those openings within the specified distance of that ventilating soil pipe. If that was so, he thought the clause was a very reasonable one. He also could see no objection to Clause 4. With regard to Clause 5, that, he took it, had to be read with the proviso, which had been overlooked. That proviso was intended to mean that there was no necessity for a duplicate block plan if that block plan showed everything necessary according to Section 2. This by-law also had a proviso, which read:—"Provided that this by-law shall not be deemed to require the deposit of any plans, sections, or particulars in the case of any repair which does not involve the alteration or the entire reconstruction of any pipe, drain, or other means of communicating with sewers or the traps and apparatus connected therewith." He suggested that proviso was intended to refer to Sub-section 4 of Clause 1. Mr. Dixon had said that these by-laws were too stringent. Well, judging from his own experience as a borough engineer of some ten years' standing, he did not think they could make these by-laws much too stringent. It was necessary, especially in the case of London, that the health of the people should be looked after in the strictest manner. Where they had an aggregation of people piled together in a small area, it was necessary those districts should be looked after in the most stringent manner. The jerry builder did not care whether the roof fell in or the floors collapsed so long as he got his rent. Mr. Van Putten said that Sub-section 6 of Clause 1 contravened the present statutory law that seven days should be given, but Sub-section 6 did not refer to notice at all, but to the deposit of plans; those were two distinct things. A man might give seven days' notice, but he had to deposit, fifteen days before the work was carried out, plans of the work. Therefore there was no conflict between the statutory law and this sub-section.

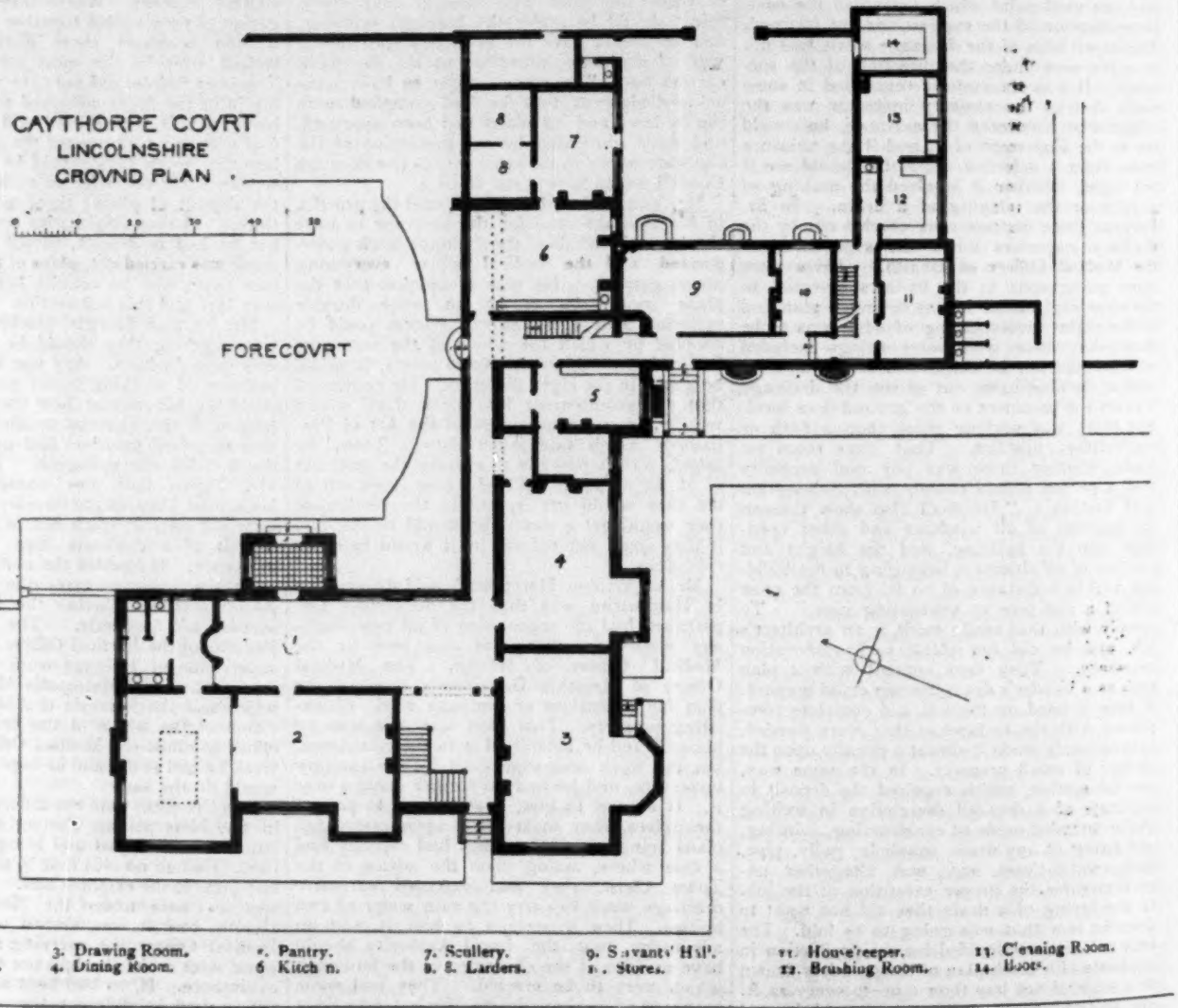
Mr. Norman Scorgie, Hackney, said if there was anything they should be thankful for, it was these by-laws. Any one who had had experience of working under provincial by-laws could not but wonder how they had got on so long with the material at their disposal. He was surprised members had got up and called the by-laws too stringent. He agreed with Mr. Gloyne that they wanted stringent by-laws, and they ought to carry out these by-laws not only in spirit but to the letter. The deposit of a duplicate copy was absolutely necessary. It enabled the man who had to inspect the work to carry the tracings in his pocket and see whether the work was being carried out properly. The practice at St. Pancras of the Medical Officer carrying out the supervision of drainage work was contrary to the spirit of the Metropolis Management Act, which said the Surveyor should have the supervision of the whole of the drainage. He declined to allow the Medical Officer to supervise work he had to do, and he hoped every surveyor would do the same.

The President said the differences of practice in the Metropolitan Boroughs would require much time to adjust and bring into a uniform line. He had no idea that in some Boroughs it had gone to the extent it had. The sanitary inspectors were under the Medical Officer of Health, and it was absurd to merge in the Medical Officer the carrying out of practical work with which he had not the slightest acquaintance. If, as had been said, the Medical Officer had in different Boroughs ousted the surveyor from his proper position, there might be difficulty in getting a uniform procedure, but it would be well, with the backing up of their Association, to try for that uniform procedure.

A desultory discussion followed as to the form of procedure to be adopted, and it was resolved that the meeting stand adjourned, and in the meanwhile a circular letter be addressed to each metropolitan surveyor informing him of the adjournment, and enclosing the forms submitted to the meeting for suggested amendment.



*Caythorpe Court, Lincolnshire. Distant view.*




## Illustrations.

### COMPETITION DESIGN FOR HULL TOWN HALL.

THIS is the design submitted by Professor Pite in the important competition for the Hull Town Hall, the particulars of which will be in the memory of our readers. The following is the author's description of his intention in the design:—

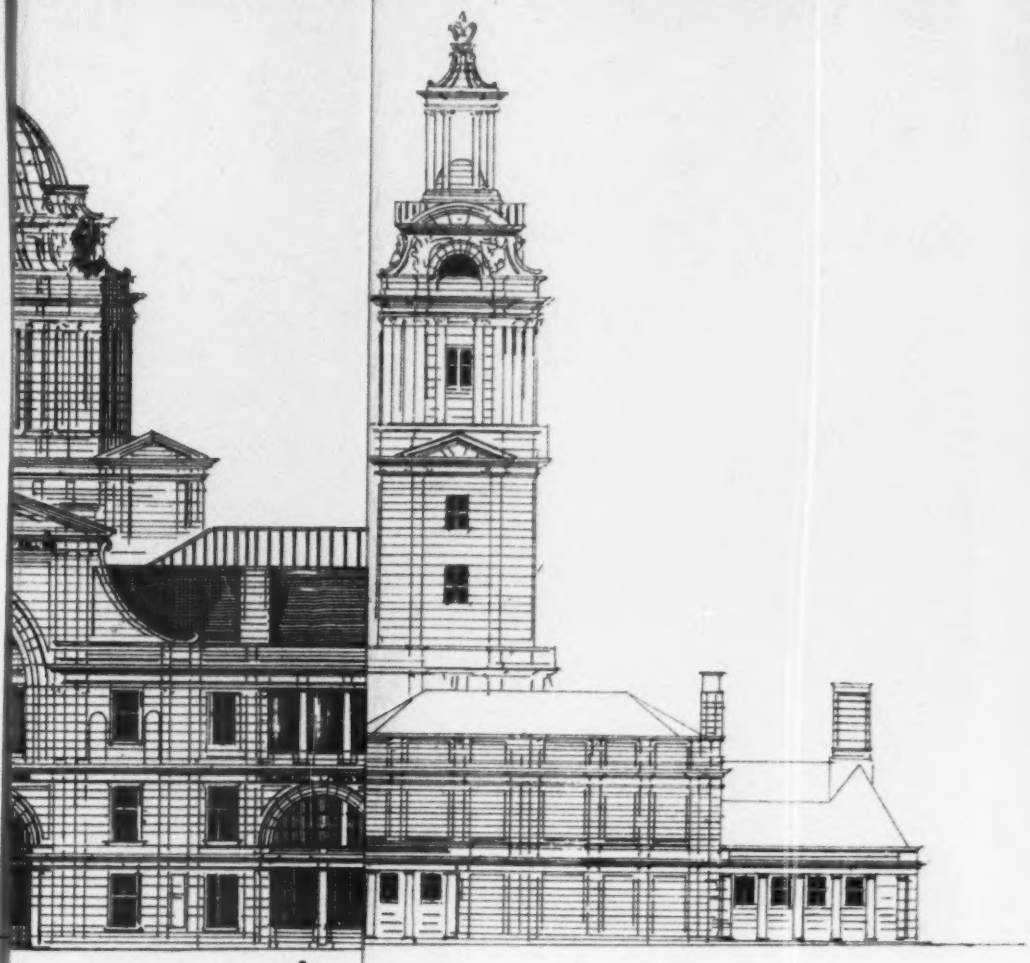
"The old Town Hall building is retained and adapted, without serious alteration, for offices. New kitchens are provided on the attic. The whole site is centred by a new block containing on the Alfred Gelder-street front the large hall and anteroom and council chamber on the main floor, and on the ground-floor two large open courts covered with glass roofs, around which the various sets of municipal offices open on the ground, and on a mezzanine floor.

The mezzanine scheme permits of the two large offices in the Finance and Engineer's Departments having a sufficient height without unduly enlarging that of the smaller rooms in the same suites.

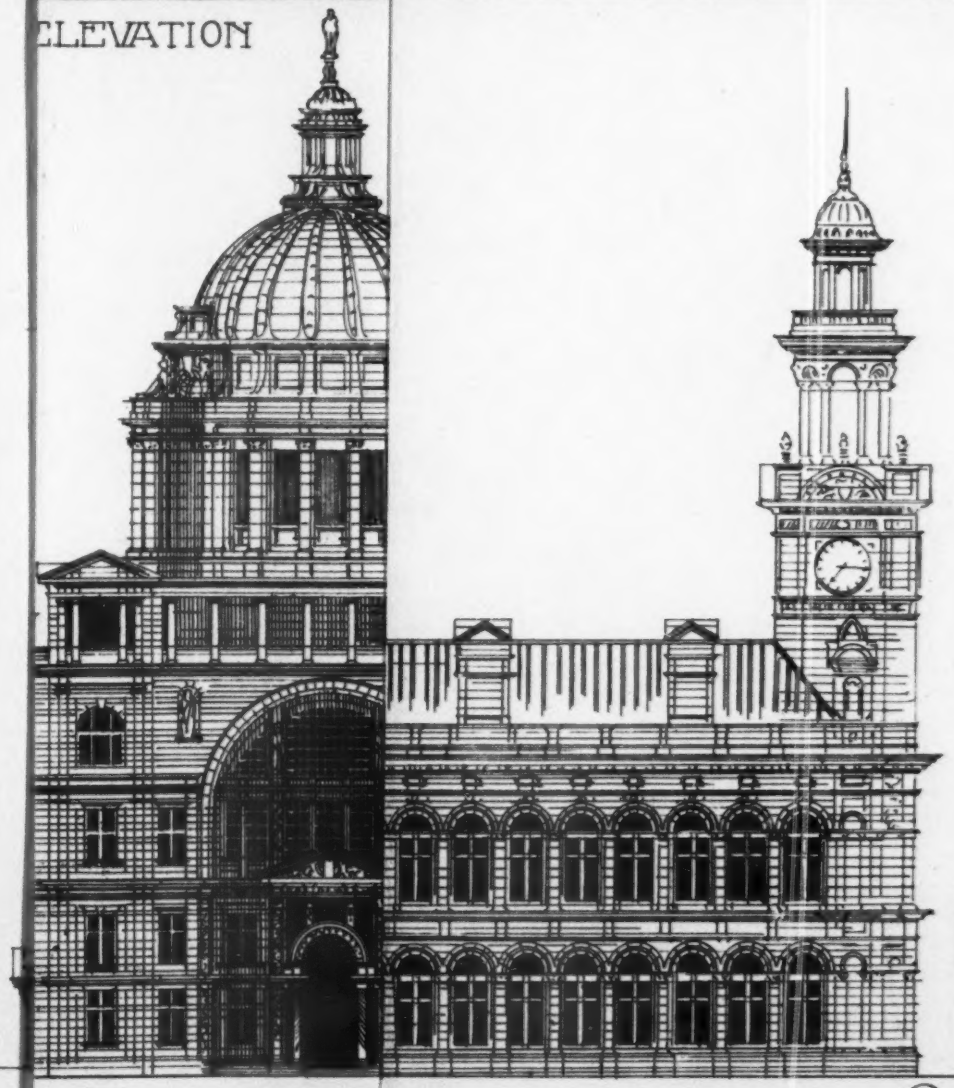
A grand staircase leads from the centre of the open courts, and is surmounted by a dome, and auxiliary staircases are placed at each end.

The law courts are placed in a self-contained block corresponding with the old Town Hall block, and having a tower of similar height, though different in detailed design.

The author considered that the great length of the site demanded a central grouping, and the arrangement of towers adopted in order



ELEVATION



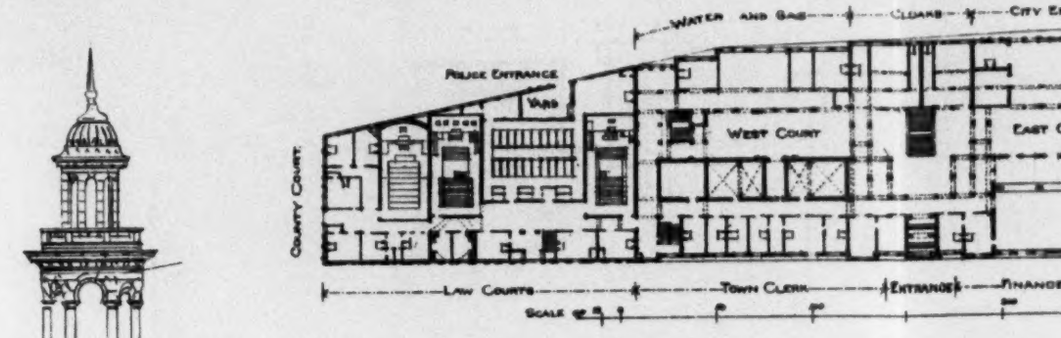
ELEVATION TO AL

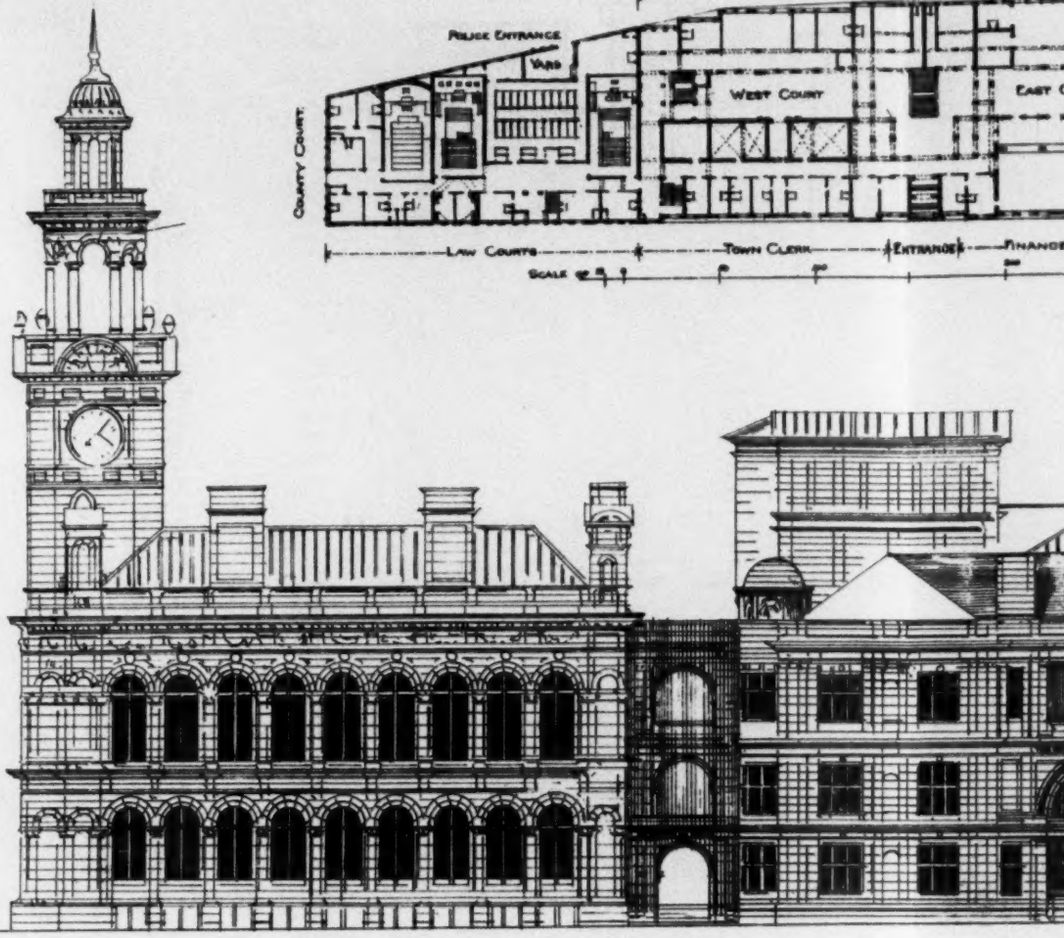
Brassington Pitt. 1903

PHOTO-LITHO. SPRAGUE & Co LTD 4 & 5, EAST HARDING STREET, FETTER LANE, E.C.

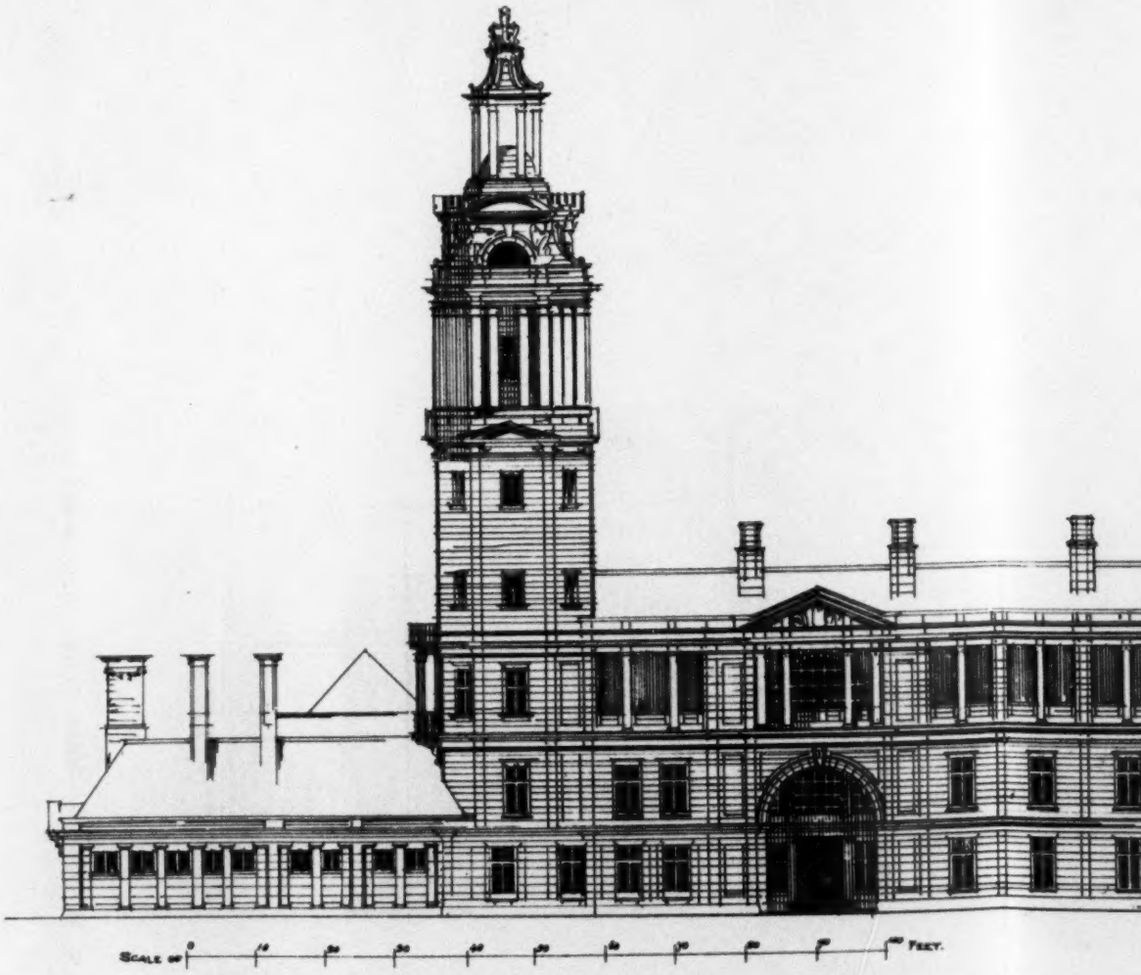
. TOWN HALL.—By Professor

GROUND FLOOR



SCALE OF 0 10 20 30 40 50 60 70 80 90 100 FEET.



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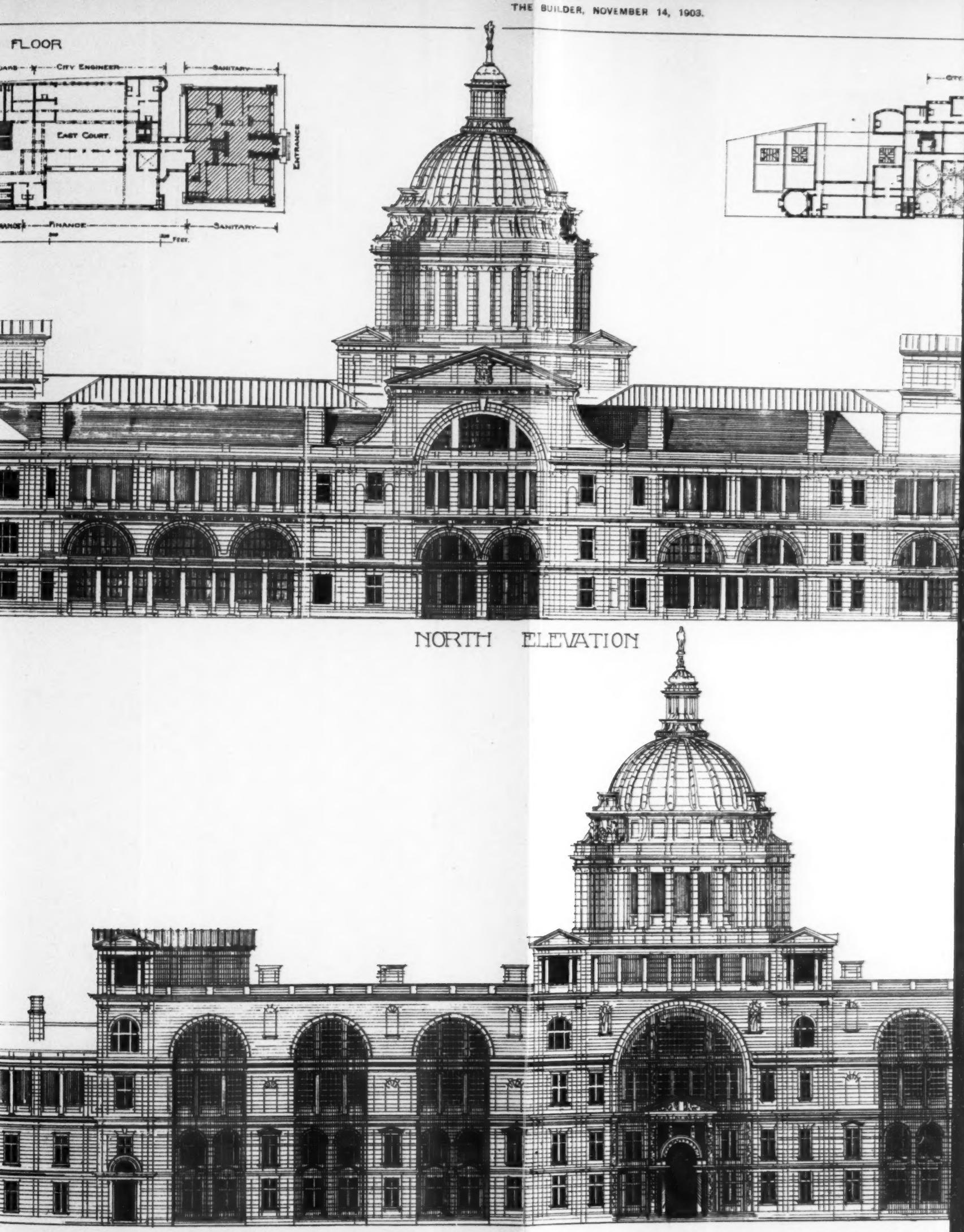
FLOOR







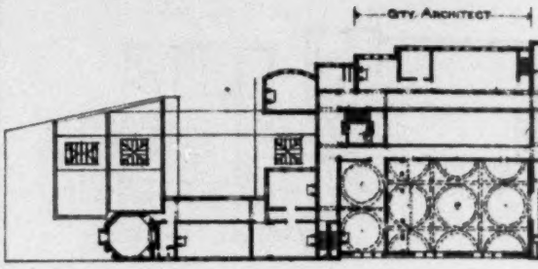


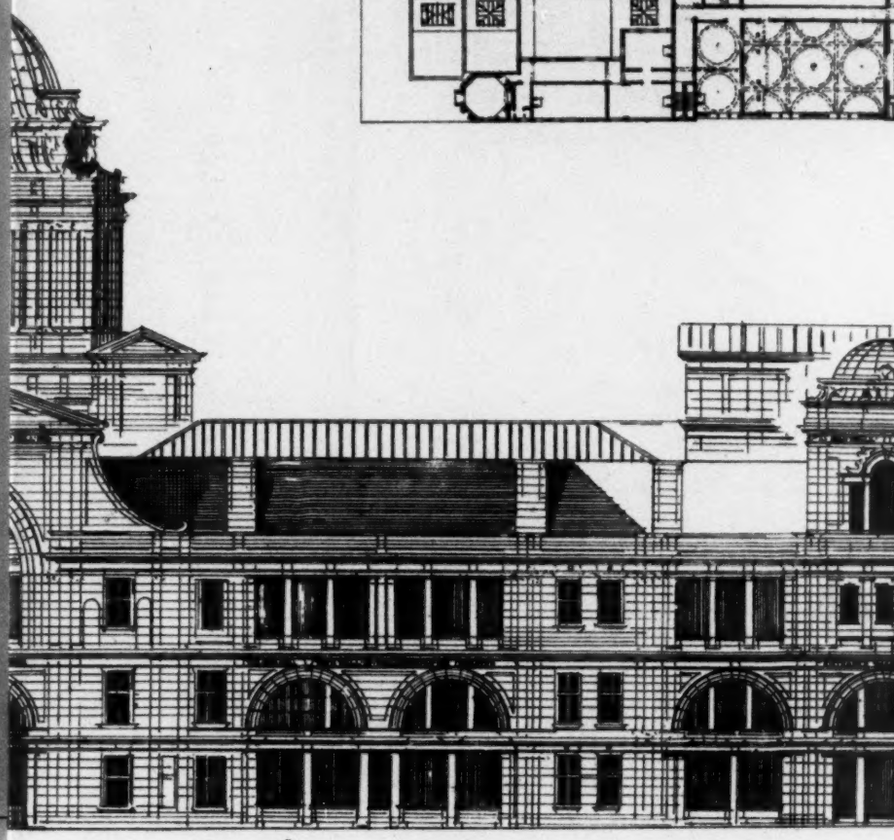
NORTH ELEVATION

PRINCIPAL ELEVATION TO ALFRED GELDER STREET

COMPETITION DESIGN FOR HULL TOWN HALL.—By Professor Beresford Pite, F.R.I.B.A.

UP



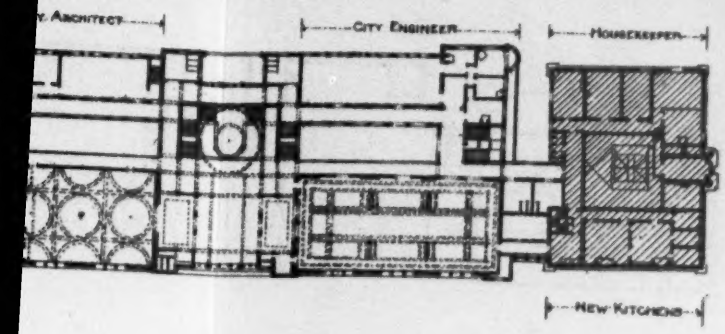



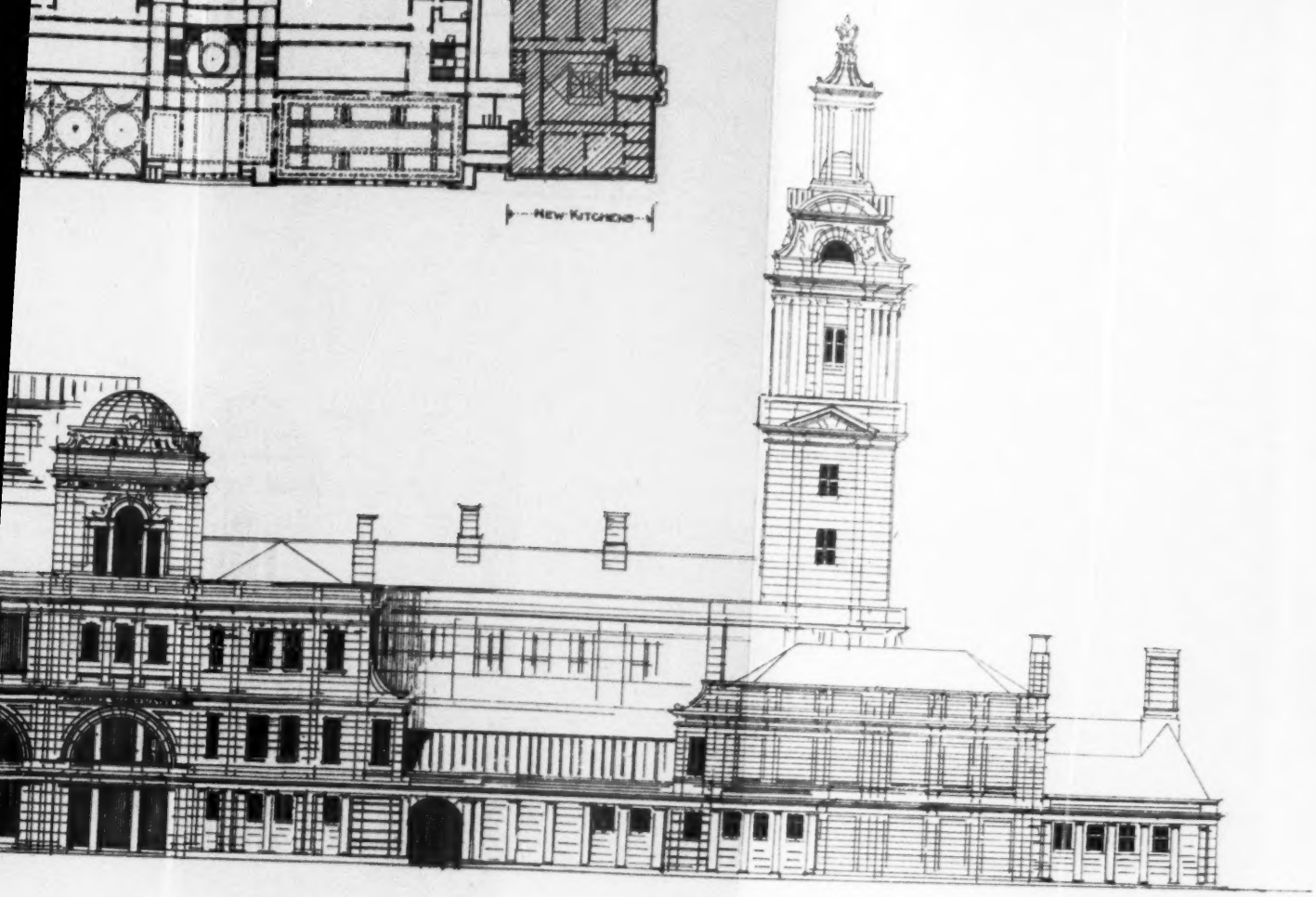
ELEVATION

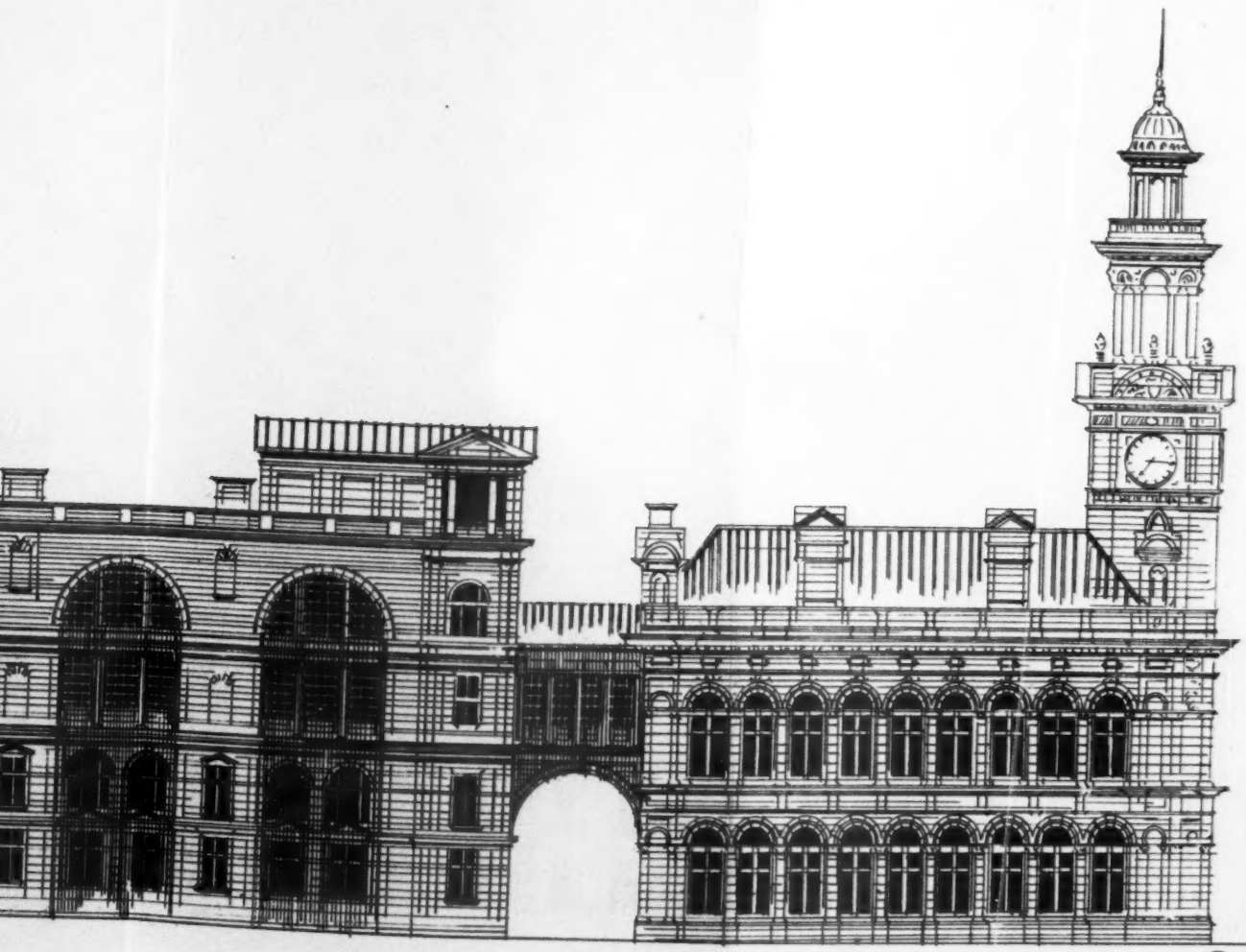
ELEVATION TO ALFRED GELDER STREET

. TOWN HALL.—By Professor Beresford Pite, F.R.I.B.A.,

UPPER FLOOR





Bunton Pite. 1903

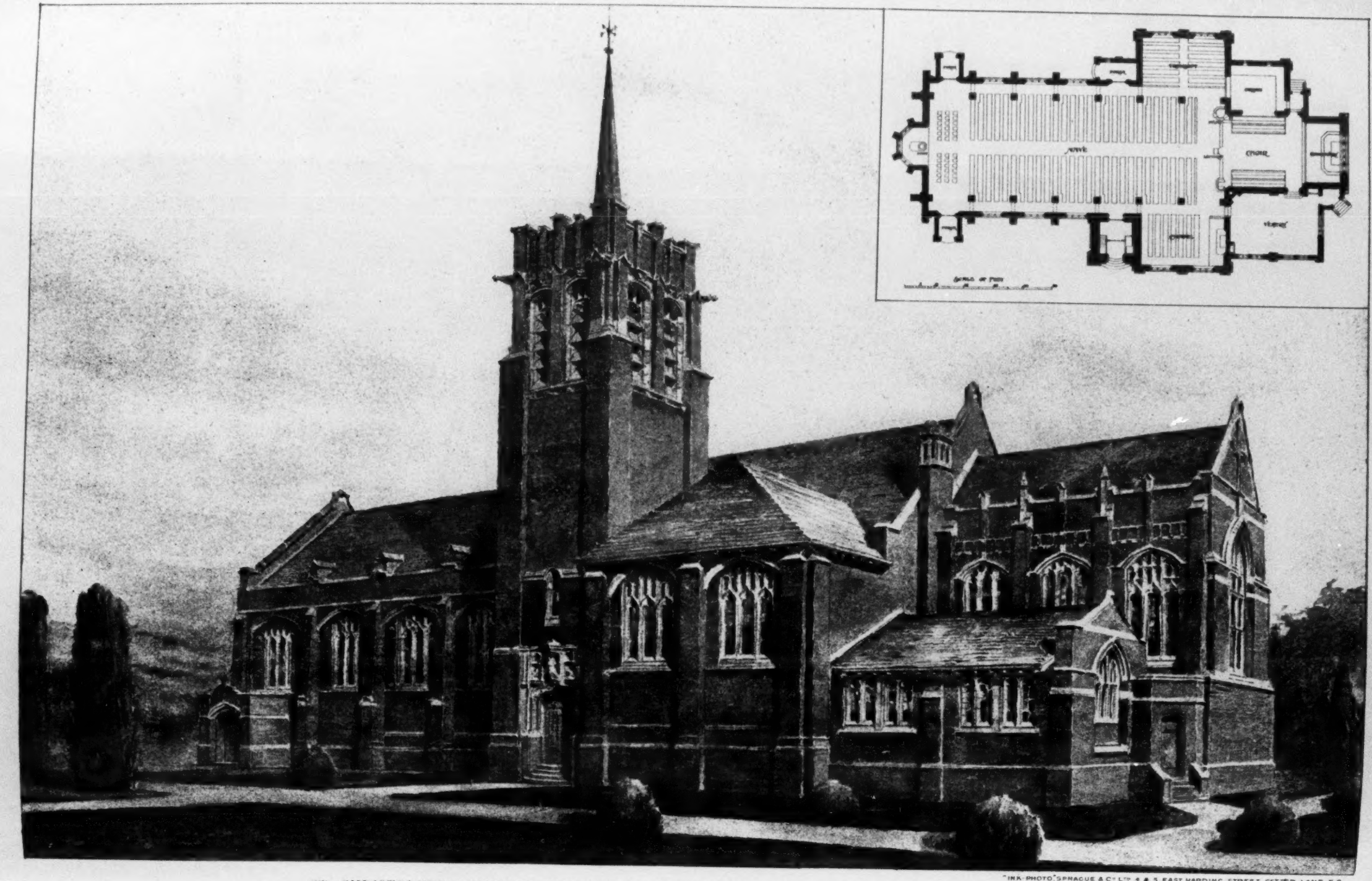
PHOTO LITHO SPRAGUE & Co LTD 4 & 5 EAST HARDING STREET, FETTER LANE, E.C.

EXTERIOR VIEW.

INTERIOR OF DRAWING-ROOM.

CAYTHORPE COURT, LINCOLNSHIRE.—Mr. Reginald Blomfield, Architect.

Sprague & Co. Ltd., Printers 4 & 5 East Harding St., E.C.



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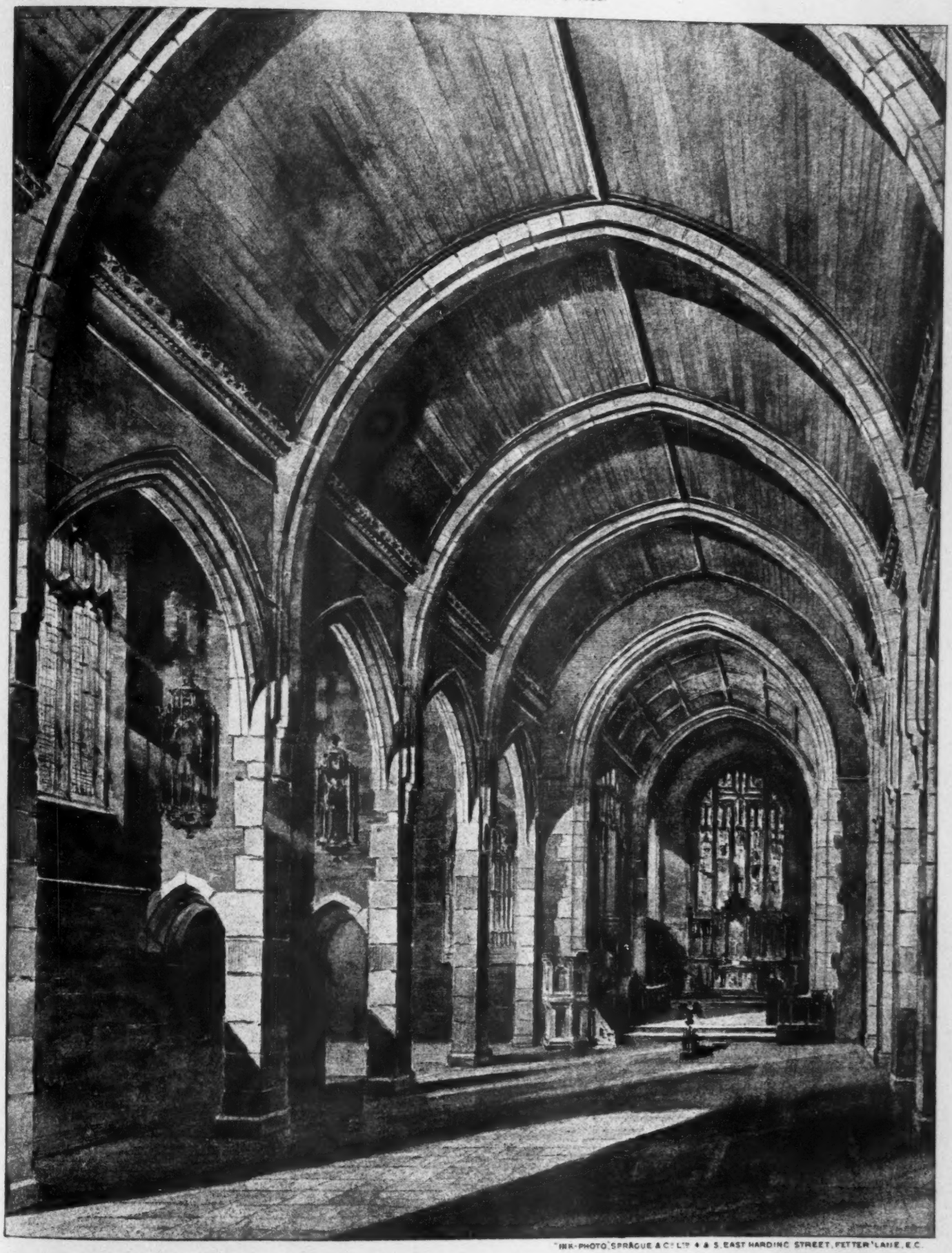
ST. CHRISTOPHER'S CHURCH, SPRINGFIELD, BIRMINGHAM.—MR. ARTHUR HARRISON, F.R.I.B.A., ARCHITECT
VIEW FROM SOUTH-EAST.



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ST CHRISTOPHER'S CHURCH, SPRINGFIELD, BIRMINGHAM.—Mr. Arthur Harrison, F.R.I.B.A., Architect.

INTERIOR VIEW.

PHOTO LITHO SPRAGUE & C° LTD 4 & 5 EAST HARDING STREET FETTER LANE E.C.

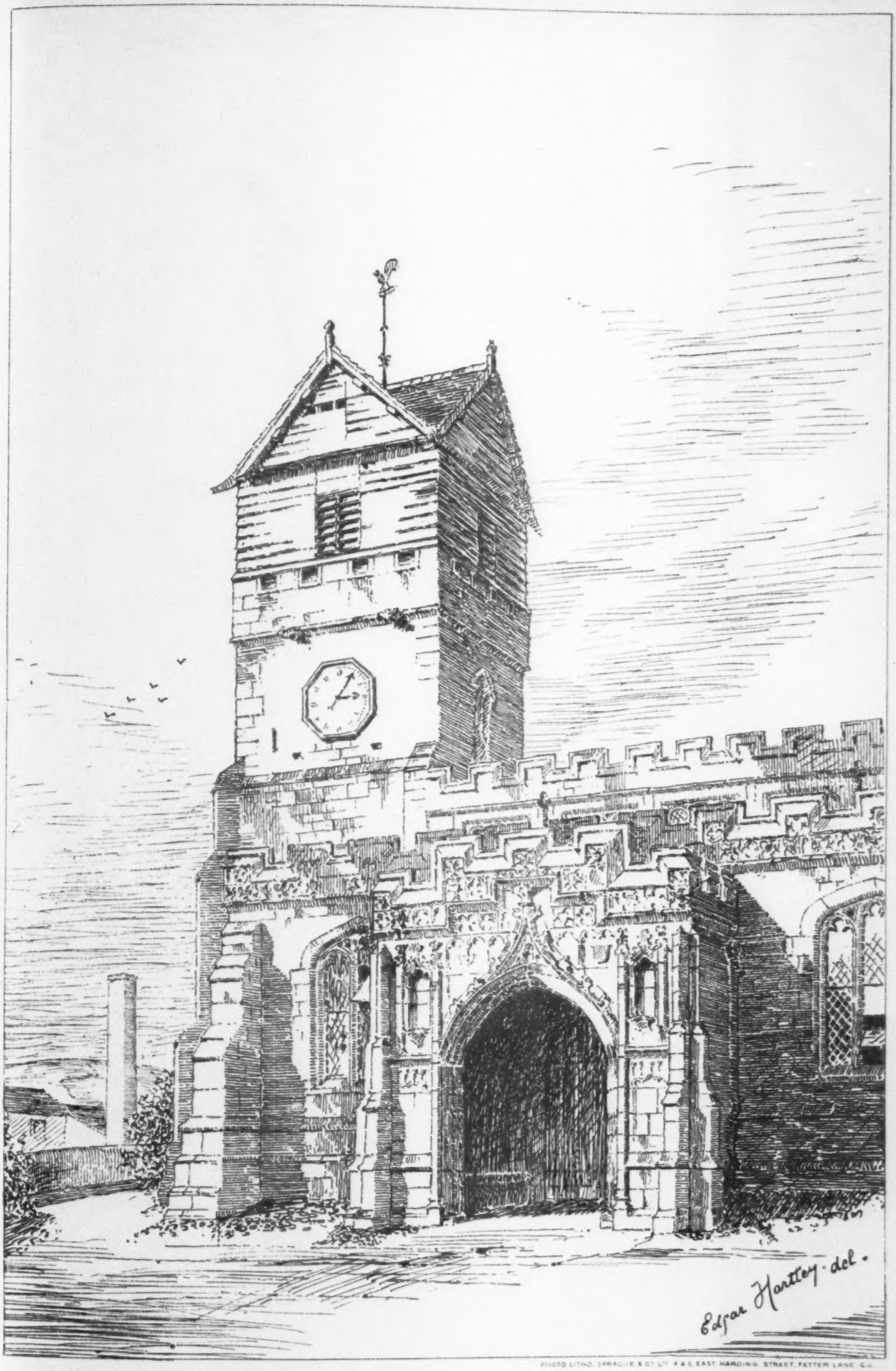
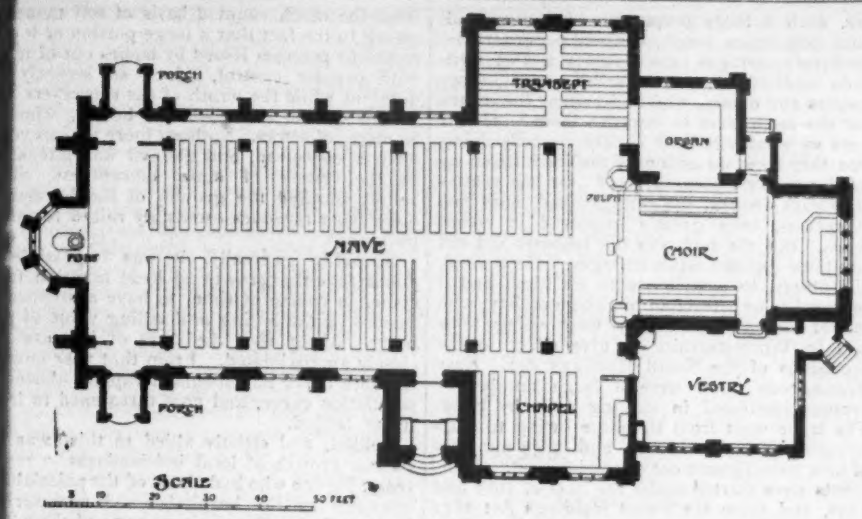



PHOTO LITHO. SPRAGUE & CO. LTD. 4 & 5, EAST HARDING STREET, FETTER LANE, E.C.

ANCIENT CHURCH OF ST. LEONARD, MIDDLETON, NEAR MANCHESTER.




*St. Christopher's Church, Springfield, Birmingham. Plan as revised.*

to combine with the existing building, the design of which, though not appealing to him as beautiful, has character and history that it would be a pity to destroy on that account. The building, also, is easily and conveniently adapted to the requirements.

A. B. P."

## CAYTHORPE COURT, LINCOLNSHIRE.

This house has been built on high ground overlooking the valley that runs from Grantham to Lincoln. The design was, by desire, based on plain seventeenth century work as practised in Lincolnshire.

On opening the site, it was found that instead of rock, as was expected, the hill-side consisted of small and large blocks of rock loose in the clay—it was, in fact, a morain—and in order to avoid the great expense of deep, continuous footings, shafts were sunk with arches between, with perfectly satisfactory results.

The walls are faced with Ancaster stone, with bands of local iron-stone; the roofs are covered with Colyweston slates. The wing to the right has a deep frieze of stamped plaster, with modelled bands of a grape vine dividing the panels.

The hall is panelled in oak, with a frieze of pheasants and partridges, by Mr. Murphy, running along one side.

Somewhat extensive terrace grounds have been laid out below the house and above it, and to the north-west are stables containing thirty loose boxes, coach-houses, harness-rooms, men's quarters, etc. Owing to the boundaries of the property and the position of the road, these had to be placed at an angle to the house.

The works were carried out by Messrs. Cubitt and Co. from the designs and under the superintendence of Mr. Reginald Blomfield, of London.

## CHURCH OF ST. CHRISTOPHER, SPRINGFIELD, BIRMINGHAM.

This church will be situated in the centre of a new district, about a mile from St. John's Church, Sparkhill. It is intended to accommodate 700 people. The plan is arranged so as to obstruct the view of the preacher as little as possible—a condition in the instructions to the architect. The nave will be 100 ft. long by 44 ft. wide, the chancel 36 ft. by 25 ft.

The building throughout will be of brick and stone—thin sand stocks of local production, and Pillough stone. The roof will be covered with green slates or Cotswold stone tiles. The floor of the church will be paved with wood blocks, and the chancel with Hopton Wood stone quarries.

Over the principal entrance will be carved stone panels representing incidents in the legend of St. Christopher. These have been modelled by Mr. Benjamin Creswick.

The architect is Mr. Arthur Harrison, of Birmingham.

## TOWER, THURGARTON PRIORY.

The Austin Priory of Thurgarton, Notts., was founded by Ralph de Ayncourt about the year 1130. The present church of Thurgarton consists of nave of three bays, north aisle, north porch, handsome, lofty, embattled tower at the north-west angle, and chancel. The church was restored and enlarged in 1853, to which date belong the chancel, north aisle, and north porch. The nave and tower are the only remaining parts of the once fine priory church. Thurgarton Priory was a house of some importance and wealth. At the dissolution its gross annual value was declared at 359*l.* 15s. 10d., and the clear value at about 100*l.* less. There can be no doubt that this noble thirteenth century tower was built soon after the priory's first foundation. The battlements, of course, represent later work.

The illustration is from a drawing by Mr. H. Harrington.

## ST. LEONARD'S, MIDDLETON.

The old Church of St. Leonard, Middleton, is of much interest. The oldest part is the remains of the Norman archway into the tower from the road, *circa* 1100. Other parts of the basement of the tower are early, though it was a good deal rebuilt in the fifteenth century. The tower is remarkable among the churches of the North of England in being crowned with a wooden belfry; a feature which would excite no surprise in Hampshire or Essex, but which is quite unusual in Lancashire. The main body of the church and the chancel were rebuilt at the beginning of the fifteenth century, the church being reconsecrated by Thomas Langley, Bishop of Durham, who was a native of this parish, in the year 1412. The south aisle was enlarged by Sir Richard Assheton in 1524. The church contains some interesting woodwork of various dates, some good brasses, as well as noteworthy sixteenth century memorial glass.

The illustration is from a drawing by Mr. Edgar Hartley.

## SANITARY INSPECTORS' ASSOCIATION:

### CHAIRMAN'S ANNUAL ADDRESS.

On Saturday evening last, at Carpenters' Hall, London-wall, Mr. I. Young, the Chairman of this Association, delivered his annual address to the members. After thanking the Association for having re-elected him as Chairman for a second year, and congratulating it on having Sir James Crichton-Browne as President for the year, he passed on to a consideration of the training of candidates for inspectors. For many years past the question had engaged the attention of the Association, but without satisfactory results. It was true that they had approached the existing examining bodies to institute practical instruction, and perhaps as far as those bodies were able, without the co-operation of that Association or of the inspectors in general, they had done what they could by arranging visits to sewage farms, waterworks, disinfecting stations, etc, but as yet nothing had been done to inculcate in the would-be sanitary inspector a sound practical training. Was it not possible for the Association to consider the question seriously? Its powers, as contained in the memorandum of association, were all sufficient, viz., "The promotion and interchange among our members and others of such knowledge of sanitary science as falls within the department of a sanitary inspector. . . . The organising of classes in London and elsewhere for the study of sanitary science and the laws relating to public health. To establish and maintain libraries, laboratories, to institute courses of lectures, etc., and to hold examinations." He saw no reason why examinations should not be held. In July last, at the Sanitary Institutes Congress at Bradford, he advocated the necessity of practical training, and suggested that the only satisfactory remedy for the present state of affairs was the recognition by the Local Government Board of the appointment of assistant inspectors. That suggestion was adopted by the conference of inspectors. On further consideration of the question, although he was still of the same opinion, it appeared to him that there remained an excellent opportunity for the Association to show its interest in promoting the cause of public health, and improving the status of inspectors, either by instituting on its own account a system of technical and practical training or by associating itself for that purpose with the present recognised teaching bodies. The percentage of persons appointed to the office of inspector who entered upon their duties only partly fitted for the work was considerable. The Association had appealed in vain for representation upon the Examination Board for inspectors and also upon that of the Sanitary Institute, but so far as he was aware they had never asked the first-named body to appoint a member of their Association as one of its examiners. There could be no doubt that an inspector should be appointed an examiner in connexion with the two bodies he had named; in fact, he considered it of much greater importance than representation on the Board. Proceeding, he said that the sanitary legislation of London was far in advance of that of the provinces, and he thought they must see that at no very distant date an amendment of the Public Health Act, 1875, must result from the diffusion of sanitary knowledge and practice, and in such amendment there would doubtless be some similar provision for the qualification of inspectors as obtained in the London Act. That being so, it was hardly probable that the Local Government Board would approve several examining authorities. If he remembered correctly, when they approached the Local Government Board to grant them representation upon the Examination Board it was intimated that there should be but one authority, and probably they would agree with that. He did not advocate any surrender of the principles they held dear and had for many years striven to obtain; but the time had arrived when, with an amalgamation of all their forces, they should seriously consider what could be done to accomplish for their profession so desirable an object. Referring to the Public Health Bill, he said that he understood that it was again to be introduced in the next Session of Parliament through the direct influence of the British Medical Association, and he appealed to the members to use their individual efforts in support of the measure by securing the co-operation of members of Parliament. During the past year the Association presented to the Local Government Board a petition asking that it would issue an instruction, under the Sanitary Officers' (London) Order, that the duty of supervising the construction of drainage work should be one for which the sanitary inspector should be held directly responsible. As one of the representatives of the Battersea Borough Council, he attended the conference convened in July last by the Borough of Camberwell to consider the question. At the conference a resolution to that effect was passed, and the Local Government Board had replied that it adhered to the view already expressed to several of the Borough Councils, that in any case where a sanitary inspector appointed by the Borough Council may be performing the work referred to, and the Council wished him to continue to perform it, he should be separately appointed for that purpose, and separate remuneration assigned to him, no portion of which to be repayable by the L.C.C., the salary to be equitably apportioned according to the amount of work devolving upon the inspector in each capacity. A further conference of representatives was therefore called on the 20th ultimo, when it was resolved that each Borough Council should arrange with the L.C.C. as to the amount of salary to be apportioned in respect of the work of supervising the construction of

drains to newly-erected buildings by the inspectors. He considered that, under all the circumstances, that was the best way out of the difficulty. In conclusion he asked for the continued support of each member of the Association to the Council during the present year.

On the motion of Mr. S. Legg, seconded by Mr. Henley, a vote of thanks was accorded the Chairman for his address.

## THE SURVEYORS' INSTITUTION.

### OPENING MEETING OF SESSION 1903-4.

The opening meeting of the new session of the Surveyors' Institution was held on Monday evening at No. 12, Great George-street, Westminster, Mr. H. T. Steward, vice-president, in the chair.

The Chairman said it was with great regret that he had to announce that the President, Mr. A. Buck, was unable to be present through illness. They would be glad to know that Mr. Buck was getting better, and that he hoped soon to be amongst them again, and in that hope they would all concur.

The minutes of the last meeting having been read and confirmed,

Mr. J. W. Penfold, hon. secretary, read a long list of donations to the library and the library fund, and a vote of thanks was accorded to the donors.

Mr. Julian C. Rogers, secretary, then read Mr. Buck's presidential address. In the course of his remarks Mr. Buck said that the surveyor had borne no inconsiderable part, during the last fifty years, in the development of that great system of public works which had transformed the face of our towns and cities. It was within his (the president's) time that society first awoke to the duties which it owes to the health and comfort of all classes of its members in the provision of a good supply of potable water, the sewerage of towns, the improvement and widening of our roads and streets, the demolition and reconstruction of insanitary dwellings, and in the provision of parks and open spaces. Nor was there any reason for fearing that the surveyor's services would be less in demand in the future than in the past, if he kept himself abreast of modern knowledge. There were still problems enough ahead to give scope to all the surveyor's resources of skill and knowledge. Among these problems was the dealing with congested areas in our large towns. Hundreds of thousands of pounds had been already spent in rehousing schemes, but the remedy, so far, showed no signs of overtaking the spread of the disease, nor was it likely to do so as long as we continue to allow an immense alien population to pour, without restraint, into our already over-crowded industrial centres. There was a good deal of talk about the decentralisation of factories, which would of course have the effect of a wider dispersal of the population dependent on them for their means of livelihood. There were signs that this process was commencing as the result of dear land and the ever increasing burdens of local taxation—an increase apparently without limit. Whether the process could be hastened by legislation, he was not prepared to say, for he was no advocate of state interference where it could be avoided. In this, as in so many other matters, the natural operation of economic causes might be trusted to provide the solution, but this at any rate was clear, that the migration of factories on any large scale must have an enormous influence on the value of suburban land, and would be fruitful of employment for the rising race of surveyors. If we ever succeeded in getting the labourers back to the land, it would only be by a very slow process, and would be brought about, if at all, by economic pressure. If we are to keep on the land those who still remain, their lot would have to be improved in some way. What was wanted was better cottages, with the increased comfort which results: but, above all, better gardens, with fruit trees, and, where possible, as much land as would satisfy the universal craving for a fixed interest in the soil. If the better housing of the working classes (many of them mechanics and high wage earners) in the towns was a matter of national concern, on what principle of equity would it be asserted that the agricultural labourer had no corresponding claim upon society at large. The London County Council showed in a recent report that they had spent on capital account, under the Housing of the Working Classes Acts, no less a sum than 3,555,480*l*. Did our country villages, in which, in some counties, such a large proportion of our agricultural population reside, contain no miserable, insanitary cottages, the property not of well-to-do landlords, but of the small owners, shopkeepers and others, who had neither the means nor the inclination to improve them? If this were so what were our county councils doing that they took no action of the kind taken by our large town corporations? On the estates of private owners, the cottages had, with few exceptions, been greatly improved in recent years. But the fact was the labourer did not love these isolated estate cottages. He wanted, like others, to associate with his kind, and if he found some attraction in village society, who should blame him? They were doing their best in Worcestershire to give effect to the provisions of the Small Holdings Act. Near Bromsgrove there were a large number of persons interested in making nails by hand. The trade went from the place owing to nails being made by machinery, and large numbers of men were thrown out of employment. Allotments were started under the Acts of 1887 and 1890, and when the Small Holdings Act 1892 was passed, it was put into operation. The County Council purchased a property of about 146 acres at a price of about 33*l*. per acre including timber. The land was very suitable, and a scheme was prepared dividing the land into 32 small holdings. The land was registered under the Act at the Land Registry, Lincoln's Inn, London, W., and the scheme was advertised. The Act and its working were explained to the men and lectures were given affording all necessary information. There was no trouble in getting applicants: the land could have been let three or four times over. The difficulty was to select suitable men. The men selected were nearly all resident in the district or had been in the district previously but had left it for the towns on account of the scarcity of work. About half the men paid down one-fifth of the purchase money before completion, the remainder had to be given time which extended over about three years. Those who completed the purchase by paying down one-fifth had the land transferred to them at the Land Registry. The remainder entered into an agreement by which they were tenants until the one-fifth was paid, and then they completed their purchases as the others had done. The result was that men pay, on a four per cent. basis, rather more than the ordinary rent of the land, but this payment was sufficient in 40 years to repay the County Council the whole of the money advanced, and was worked out to leave a very fair profit. A building scheme had also been arranged under which a small holder could obtain an advance to enable him to build. He forwarded plans, specifications, etc., and the same were submitted to the County Surveyor and the County Medical Officer. If the building was to be erected on a proper site approved by the County Surveyor, and the building was in accordance with the building by-laws of the Local Authority, and met with the approval of two officers mentioned, the County Council informed the applicant that they would advance up to three-fourths of the actual contract price of the proposed building. A tender was then obtained and a formal contract and bond were entered into, the Clerk of the County Council preparing all the necessary documents, and so safeguarding the county ratepayers. The Council then formally agree to pay three-fourths of the contract price, leaving the small holder to find the remaining one-fourth and to pay the architect's fees. The money was advanced from time to time on the County Surveyor's certificate. Very good houses, consisting of a good kitchen—living-room, with back kitchen and larder, and three good bedrooms had been erected, with the necessary outbuildings, including stable, toolhouse, copper for boiling pig food, and generally two pigstys, and the contract price had usually been about 350*l*. All repairs were done by the County Council, and the county insure the property, thus protecting their own interests. In addition to the land above mentioned, the County Council have acquired, close to the same, about 300 acres as a site for a new lunatic asylum, and until the asylum is built the land has been let off.

Turning to another subject, he said our system of local taxation could not wait much longer for radical reform. It was becoming a grievous burden, uncertain and unjust in its incidence and full of the most absurd anomalies. Like our political system, it had grown by accretion and rested on no rational foundation or intelligible principle. It had got away from the much vaunted basis of self taxation, owing to the fact that a large portion of it was raised by precepts issued by bodies out of touch with popular control, which sit serenely indifferent while the wrath of the ratepayers was vented on the locally-elected bodies, who act as mere collectors. Nothing more vicious could well be conceived, and the evil was intensified by the system of state subventions which simply masked the growth of the burden by doles from revenues ostensibly raised for other purposes.

Speaking generally, it was impossible to doubt that the growth of local taxation must come, in course of time, to have a serious influence on the letting and selling value of property. About 1891 the rates of increase had closely approximated. From that year onward the rate curve had mounted rapidly above the population curve, and now threatened to leave it far behind.

Behind, and strictly allied to this, was the serious growth of local indebtedness in recent years. No one who had observed the palatial asylums and isolation hospitals which were springing up all over the country, some of them only partly used, and some not used at all, would be at a loss to discover where a great deal of the money had been wasted. He also noticed in this connection a growing tendency on the part of government authorities to insist on schemes of sewerage in small villages, involving an outlay quite incommensurate with any advantages obtained. A check to this extravagance would ultimately be found in the increasing difficulty in obtaining loans at low rates for interest and re-payment.

Municipal trading, another branch of the same subject, should be narrowly watched by the legislature. It represents, in its extreme forms, an attempt to lighten the burdens on the ratepayers resulting from crude legislation on such subjects as rivers pollution, sewage treatment, and what not—legislation in many cases far in advance of sound knowledge and practical possibilities. His own town (Worcester) was compelled fifty years ago to turn its sewage into the Severn. They were now peremptorily ordered to take it out again, despite the fact that no trace of organic impurity was discoverable five miles below the city. There could not be a doubt that many modern phases of municipal trading were quite indefensible from a business point of view. The control of the water supply was clearly a matter which should rest with a public body. As much might perhaps be said for tramways, but he doubted the policy of going further. Gas supply and electric lighting were, in his opinion, better in the hands of private companies, who were free from the kind of pressure on the part of employees which had such a tendency to increase the cost of production. But these were matters which lay on the borderland between legitimate and illegitimate forms of public trading, and diverse views might very well be held with regard to them. It was a very different thing when public bodies betook themselves to such forms of commercial enterprise as telephones, hydraulic power supply, cold air storage, and ice supply, laundries, etc., while, to make matters worse, there was, except in one or two places where special Acts existed, no effective audit of the accounts of the large corporations, the supervision amounting to little more than a verification of totals, by a person appointed under the Municipal Corporation Act, 1882, (who must himself be a member of the Town Council and be nominated by the mayor), and two elective auditors, neither of whom need be a professional accountant.

On the subject of our roads he could not help thinking that we were on the eve of great changes which would have a considerable effect upon them throughout the country. For the purposes of haulage, the horse seemed doomed to disappear, as in the early railway times when his days were held to be numbered. Whether we like it or not, the motor and the traction engine were about to take possession of our highways, most of which, suitable enough for traffic of ordinary speed or weight, were very ill adapted for the swifter and heavier form of locomotion which were apparently imminent. Many of our roads would have to be increased in width. Awkward corners would have to be rounded off, gradients made easier, and road surfaces improved. This, if his forecast be true, would involve extensive dealings with contiguous property and much re-adjustment of boundaries, providing ample work for surveyors. The total mileage of main roads in

this country (exclusive of those comprised in the County Boroughs) was 26,598 miles, of which there were 3,819 miles in the urban districts, and consequently under sole control of the Urban Authorities, and 22,779 miles in the rural districts under the control of rural District Councils. As a consequence, there was no uniformity of administration and no probability of conjoint action. Take an example:—It appeared that the great North Road, from London to Edinburgh, was divided for administrative purposes among seventy-two authorities who on no possible assumption would be likely to co-operate for the purpose of widening or improving that great artery of traffic. This was only one instance. Cases might be cited all over the country, and if, as seemed likely, the widening of the existing main roads and the provision of new trunk roads was rapidly becoming necessary for proper intercommunication, one was forced to the conclusion that the great highways should be removed from the control of the present subordinate authorities and placed under the jurisdiction of county highway boards, and that certain highways which were of more than county importance, should be declared to be "national" roads, maintainable out of Imperial funds. One proposal before the Departmental Committee on "Highway Authorities and Administration," was that the provision of new trunk roads might be left to private enterprise, and that the inducement to the undertakers to invest their money would be found in permitting them to acquire, by compulsory powers, a strip of land (modestly put at a quarter of a mile wide) on each side of the road, which they could sell for building purposes. He did not know how the adjoining owners would relish the prospect of this alienation of their frontages. Except by the re-introduction of the system of tolls, which would be intolerable, there seemed no way of meeting a demand for new trunk roads but by the expenditure of Imperial funds or by the imposition of the abandoned "van and wheel tax," to which so much exception was taken when it was proposed as a feature of the Budget some years ago. We were told that there are already 10,000 motor cars on the roads (to say nothing of traction engines), and that 10,000 more are in course of construction in this country. If this be so, the improvement and widening of the roads must soon form the subject of comprehensive legislation, for the problem had already become acute in suburban districts, and would rapidly become so all over the country.

As to the Institution, it would soon number 4,000 of all classes from every part of the United Kingdom, but there were abundant signs that they were about to have a considerable influx of members from our colonies. The Council were considering the desirability of holding branch examinations in South Africa for building and quantity surveyors, many of whom had expressed a wish to be connected with the Institution. The Institution had lately introduced certain modifications in the by-laws. Some of these were aimed at unworthy practices, happily limited to a few, but from which any self-respecting profession must purge itself if it was to stand well in the public esteem. The introduction of an alternative title was a measure of protection against those who without warrant arrogate to themselves professional descriptions which did not belong to them. Whether the new title of "Chartered Surveyor" would or would not commend itself to the majority of the members remained to be seen, but of this he felt certain, that no one who had once adopted it would willingly divest himself of it again.

The Chairman proposed a hearty vote of thanks to the President for his excellent address, which contained many points of value to them. In moving that resolution, he desired once more to express his and their sympathy with the President in his illness, coupled with the hope that he would soon be able to preside at the meetings. It was a great advantage to have as President one who was so justly and universally esteemed, and who possessed such an extended experience as did Mr. Buck.

Mr. C. Bidwell seconded the motion, and, in doing so, briefly referred to the question of labourers leaving the land. He thought that the cause of this was partly owing to the condition of the houses of the people; there was a great need of better cottages.

The motion having been heartily agreed to,

The Chairman announced that the next meeting will be held on November 23, when Mr. H. T. Scoble will read a paper entitled "Industrial Decentralisation: an Important Factor in the Solution of the Housing Problem."

The meeting then terminated.

## *ARCHITECTURAL SOCIETIES.*

The Royal Institute of the Architects of Ireland.—A General Meeting of the members of the Royal Institute of the Architects of Ireland was held at Lincoln-place, Dublin, on the 6th inst., Mr. G. C. Ashlin (President) in the chair. The ballot papers for the election of Honorary Secretary and Honorary Treasurer were examined, and the President announced that Mr. R. Caulfield Orpen had been elected Honorary Secretary, and Mr. Charles Ashworth Honorary Treasurer of the Institute for the ensuing three years. Mr. J. Rawson Carroll and Mr. William Mitchell seconded the following resolution, which was carried unanimously:—"That the Institute, at its General meeting, take the opportunity of placing on record its hearty appreciation of the indefatigable energy and tactful skill which Mr. Kaye Parry has displayed in carrying out the duties of Honorary Secretary to the Royal Institute of the Architects of Ireland during his term of office." A cordial vote of thanks to the out-going honorary treasurer (Mr. C. A. Owen) was moved by Mr. W. Kaye Parry, seconded by Mr. R. Caulfield Orpen, and carried unanimously.

Leeds Architectural Society.—At the annual meeting of the Leeds and Yorkshire Architectural Society on the 5th inst., Mr. Butler Wilson, the President, in the chair, Mr. H. S. Chorley (Hon. Secretary) presented the twenty-eighth Report, which is a detailed account of the proceedings of the Society for the past eighteen months. The aggregate membership, it appears, is 141, namely, 31 honorary members, 61 members, and 44 associates, as against a membership of 137 at the date of the last Report. The Council express regret that Mr. C. R. Chorley, one of the oldest members of the Society, and a past President, has resigned his membership on account of his leaving Yorkshire on his retirement from business. Regret is also expressed at the resignation of Mr. J. Tweedale, and at the death of Mr. E. Birchall, also a past President. At the Preliminary and Intermediate R.I.B.A. examinations for the north-eastern division of the county, in June and November, twenty-one candidates presented themselves. The competition among the Associates for the prizes offered by the Society was keener and more enthusiastic than in the immediate previous years, and the work submitted was judged to be of a better and more even quality than had been the case in the three previous years. The silver medal and prize of five guineas given by the President, for the best measured drawing of any ecclesiastical or domestic building erected anterior to 1800 A.D., was awarded to Mr. Martin Shaw Briggs, for measured drawings of Swinsty Hall, Yorkshire. A special prize of three guineas was awarded to Mr. P. A. Horrocks, for measured drawings of Hall i' the Wood, Bolton; the prize of three guineas, for the best design of an entrance lodge and gateway, to Mr. Ralph Thorp; the prize of two guineas, for the best essay on "Modern Street Façades in Leeds," to Mr. Martin Shaw Briggs; and the sketching prize of three guineas to Mr. J. C. Procter. The Council report that no further steps have been taken to create a chair of architecture at the Yorkshire College. Mention is made in the Report of the Council's active interest in the proposed laying out of Victoria-square, and also in the improvement of City-square. In regard to the former, it is pointed out that the first essential is the enlargement of the square on its southern side, the present area being totally inadequate to receive any architectural treatment which would be in scale with the Town Hall. In regard to City-square, the President formed one of a deputation from the Society to the Improvements Committee, and asked that a new frontage line at the south-west corner between Wellington-street and Quebec-street should be adopted, corresponding to and exactly repeating the building line of the Standard Assurance buildings on the opposite side of the square, and also that the building to be erected on the vacant ground should harmonise, and as far as possible correspond in outline and skyline, with the Standard Assurance buildings. This suggestion has been adopted. The Council express their gratitude for the valuable collection of architectural work bequeathed to the Society by the late Mr. E. Birchall, and notify that steps are being taken to deposit the Society's library with the City Library Authorities for better security and supervision.—The Report was adopted on the motion of Mr. G. F. Bowman, seconded by Mr. R. P. Oglesby. Mr. W. H. Thorp (Hon. Treasurer) read the statement of accounts, which showed a balance in hand at the end of the financial year of 95*l.* 5*s.* 2*d.*, as compared with 96*l.* 8*s.* 1*d.* the previous year. The balance-sheet was adopted on the motion of Mr. H. Perkin.

Glasgow Architectural Association.—The Second Ordinary Meeting of the Glasgow Architectural Association was held at 187, Pitt-street, on Wednesday, the 4th instant, when a paper was read by Mr. C. Ernest Elcock, entitled "Through York with a Camera." The audience was taken on an extensive tour through the old city, original slides being used, showing in some detail the points of interest to an architectural society. The cathedral, or minster, came in for a large share of attention, the lecturer rapidly sketching its rise from about the middle of the seventh century to the present day. Some good slides of portions of the streets and houses not usually photographed were also shown, not omitting the "Bars" or ancient gates of the city, which are in a remarkably good state of preservation. In the course of the paper the lecturer made several pointed allusions to the imitative and "slavish copying of antique detail" which is unfortunately the prevailing style of much of present-day architecture. In closing, he strongly encouraged all his hearers to endeavour to express in their work the customs and requirements of modern life; not cloaking their buildings with an architecture which belonged to other climatic conditions and needs, but erecting buildings instinct with the life and vigour of our own times, yet free from the outrageous torturing of material, which is supposed by some eccentric persons to be the acme of architectural design.

## THE LONDON COUNTY COUNCIL.

The usual weekly meeting of the London County Council was held on Tuesday, in the County Hall, Spring Gardens, S.W., Lord Monkswell, Chairman, presiding.

*Loans.*—On the recommendation of the Finance Committee, it was agreed to lend Camberwell Borough Council 5,000*l.* for erection of buildings at depot; Hackney Borough Council 47,612*l.* for contributions to street improvements; and Lewisham Borough Council 1,325*l.* for various purposes. Sanction was also given to the borrowing by Islington Borough Council of 3,753*l.* for electricity meters, and by Westminster City Council of 63,000*l.* for the erection of working-class dwellings.

*Proposed New Fire Stations.*—The following recommendations of the Fire Brigade Committee were agreed to, after discussion:—

"That the estimate of 62,450*l.* submitted by the Finance Committee in respect of a new fire station in substitution of the Watling-street station be approved, and that the Fire Brigade Committee be authorised to make the necessary preliminary arrangements for the erection of such a station on the site of Nos. 86 and 88, Queen Victoria-street, and Nos. 30 and 32, Cannon-street.

That the Parliamentary Committee be instructed to insert in a Bill to be promoted by the Council in the next Session of Parliament a clause authorising the Council to acquire compulsorily the remaining interests in the premises Nos. 86 and 88, Queen Victoria-street, and Nos. 30 and 32, Cannon-street, with a view to the erection on the site of such premises of a new fire station in place of the Watling-street station.

That the Parliamentary Committee be instructed to insert in a Bill to be promoted by the Council in the next Session of Parliament a clause authorising the Council to acquire compulsorily a piece of vacant ground at the junction of Hooper's-court with Basil-street, immediately opposite Pavilion-road, with a view to the erection thereon of a new fire station in place of the existing Knightsbridge station.

That the Parliamentary Committee be instructed to insert in a Bill to be promoted by the Council in the next Session of Parliament a clause authorising the Council to acquire compulsorily a plot of vacant ground at the junction of Shrewsbury-lane and Eaglesfield-road with a view to the erection thereon of a new fire station in substitution of the Shooter's hill station."

The following recommendation in regard to each proposal was agreed to:—

"That the Parliamentary Committee be instructed to arrange for the insertion in the Bill of a clause providing that compensation shall not be paid in respect of new interests created or improvements made in the above property after October 31, 1903, the date on which the Council's intention to acquire the property was made public."

*Improvement.*—The following recommendation of the Improvements Committee was agreed to:—

"That the estimate of 21,500*l.* submitted by the Finance Committee be approved; and that expenditure on capital account not exceeding that amount be authorised in respect of the purchase of property needed for the widening of Brook Green-road and Scrubs-lane authorised by the London County Council (Tramways and Improvements) Act, 1903."

*Main Drainage Extension—Southern Outfall Sewer Enlargement.*—The Main Drainage Committee reported as follows:—

"On December 5, 1899, we submitted to the Council a scheme for the general enlargement of the main drainage system, and, as a first instalment of the work required on the south side of the river Thames, we recommended the construction of an additional sewer, 11 ft. 6 in. in diameter, between the Crossness outfall and the Deptford pumping-station at an approximate cost of 500,000*l.* The scheme further provides for the ultimate construction of a high-level sewer, 11 ft. 6 in. in diameter, from the Crossness outfall to Catford, at a cost of about 520,000*l.*, but as this sewer should be placed on the top of the new outfall sewer as far as the Plumstead railway station, we advised that the two sewers should for that distance be put in hand simultaneously, as the cost of excavation and other work would thereby be considerably lessened, the cost of such length of the high-level sewer being roughly estimated at 150,000*l.* Our recommendations, involving a capital outlay of 650,000*l.*, were adopted by the Council, and one section of the new sewers at the Crossness end is approaching completion. The drawings, specification, and bill of quantities of another section (B), with a total length of 10,200 ft., have now been prepared, and the engineer estimates the total cost of the operations at 291,000*l.* We think that the work should be carried out without the intervention of a contractor, and the Works Committee have expressed their willingness to undertake it at the amount of the engineer's estimate. The cost of the new sewers is covered by the votes already passed, and we accordingly recommend—That the expenditure of a sum not exceeding 291,000*l.* be sanctioned in respect of the construction of section B of the proposed new sewers between the Crossness outfall and the Plumstead railway station; that the work be carried out without the intervention of a contractor; and that the drawings, specification, and estimate of 291,000*l.* be referred to the Works Committee for that purpose."

Colonel Rotton moved to refer the recommendation back for further consideration. He understood that a contractor was prepared to carry out the work for 50,000*l.* less than the Engineer's estimate.

Mr. Squires seconded. He said that a circular had been sent round saying that a contractor was prepared to do the work for a much lower sum, and he would like to know how the contractor had got access to the plans and specification.

Mr. Torrance said that the contractor could not have seen the plans and specification, and that, consequently, his estimate was of no value.

Mr. Goodwin said that as a contractor he could say that it was impossible to give a proper estimate for such work without seeing the plans and specification.

The motion on being put was lost, and the Committee's recommendation was then agreed to.

*District Surveyors.*—The Building Act Committee reported as follows, the recommendation being agreed to:—

"We have received a request from Mr. O. C. Hills, District Surveyor for East Hackney (North), to be furnished with a sealed copy of the Council's by-laws made under the Metropolis Management and Building Acts Amendment Act, 1878, and the London Council (General Powers) Act, 1890. The Council on November 3, 1891, decided to supply sealed copies of these by-laws to all the District Surveyors then holding appointments. Since that date, however, ten new District Surveyors have been appointed, and it is desirable that these gentlemen should be provided with sealed copies of the by-laws. We also consider that ten further copies should be sealed for future use. We recommend that the seal of the Council be affixed to 20 copies of the by-laws made under the Metropolis Management and Building Acts Amendment Act, 1878, and the London Council (General Powers) Act, 1890."

*Hainault Forest.*—The Parks Committee reported that satisfactory progress is being made with the acquisition of the various properties required for the Hainault Forest scheme. Mr. E. North Buxton had been actively employed on the work of re-afforesting the farmed land, the result of which would be very apparent by the time the land is thrown open for public use. The Committee recommended that the thanks of the Council be given to Mr. Buxton for the assistance he has rendered in securing Hainault Forest as a public open space.

Mr. Cleland, the Chairman of the Committee, referred in warm terms to the indefatigable industry which Mr. Buxton had brought to bear on the matter.

The recommendation was adopted and the Council adjourned at seven o'clock.

## APPLICATIONS UNDER THE 1894 BUILDING ACT.

**The London County Council at their meeting on Tuesday dealt with the following applications under the London Building Act, 1894. The names of applicants are given between parentheses:—**

*Lines of Frontage and Projections.*

*Marylebone, East.*—An oriel window to a new building adjoining No. 17, Union-street, St. Marylebone (Messrs. Clark and Boulting for Mr. T. J. Boulting).—Consent.

*Holborn.*—An iron sign in front of No. 34, Eagle-street, Holborn (Messrs. H. Cooper and Co.).—Consent.

*Islington, East.*†—Bay windows to a block of residential flats on the site of No. 14, Highbury-crescent, Islington (Mr. F. J. Garlick for Messrs. C. W. Matthews and A. E. Bailey).—Refused.

*Kensington, North.*†—An iron and glass covered way in front of No. 13, Pembridge-crescent, Kensington (Messrs. Davis and Emanuel for Mr. I. Davis).—Refused.

*Deptford.*—The retention of a wood and iron one-story shop on the forecourt of No. 7, Evelyn-street, Deptford (Messrs. Witherington and Hogwood for Mr. F. Podbury).—Refused.

*Width of Way.*

*Hammersmith.*—Forecourt fences in front of Nos. 119, 121, and 123, St. Ann's-road, Nottinghill (Mr. H. T. C. Newton-Mason for Mr. W. Hayes).—Consent.

*Westminster.*†—A two-story building adjoining, to the westward, No. 57, Upper Garden-street, Westminster (Mr. E. D. Clarke for Mr. W. Price).—Refused.

*Width of Way and Space at Rear.*

*Fulham.*—Buildings on the south side of Effie-road and east side of Effie-place, Fulham (Mr. G. Pestall for the Metropolitan District Railway Company).—Consent.

*Formation of Streets, etc.*

*Clapham.*—That an order be issued to Mr. A. E. Balls sanctioning the widening of a portion of Wix's-lane, North-side, Clapham Common.—Agreed.

*Wandsworth.*—The retention of barriers across Ellerton-road, Burntwood-lane, Wandsworth (Messrs. Holloway Bros.).—Consent.

*Wandsworth.*—That an order be issued to Mr. J. C. Radford, sanctioning the formation or laying out of a new street for carriage traffic, to lead out of the west side of Larpent-street, Howard's-lane, Putney (Lord Westbury).—Consent.

*Woolwich.*—A deviation from the plans previously approved for the formation of new streets upon the Eltham Park Estate, High-street, Eltham, so far as relates to an alteration in the gradients of part of Crookston-road, Gleneskroad, Dairsie-road, Deansfield-road, and Dumbreck-road (Mr. R. Stewart for Mr. A. Cameron Corbett, M.P.).—Refused.

*Woolwich.*—That an order be issued to Messrs. Tapp and Jones refusing to sanction the formation or laying out of new streets in continuation of Fernhill-street, Silverland-street, and Brixham-street, North Woolwich.—Refused.

*Artisans' Dwellings.*

*Islington, North.*—That the amended block plan submitted by Mr. R. Robertson for the Housing of the Working Classes Committee of the Council, be substituted for the block plan approved by the Council on the 11th day of February, 1902, for the erection of blocks of intended dwelling-houses to be inhabited by persons of the working-classes, and proposed to be erected not abutting upon a street on a site on the western side of Wedmore-street, Islington, southward of Wedmore-mews.—Agreed.

*Buildings for the Supply of Electricity.*

*Hackney, South.*—Additions to a generating station and works on the north side of Millfields-road, Hackney (Messrs. R. Hammond and Son for the Council of the Metropolitan Borough of Hackney).—Consent.

***The recommendations marked † are contrary to the views of the local authorities.***

## ROYAL COMMISSION ON LONDON TRAFFIC.

The Royal Commission appointed to inquire into the matter of improving the conditions of locomotion in London resumed its sittings on Friday last week at the Westminster Palace Hotel, S.W., under the presidency of Sir David Barbour.

Mr. W. E. Riley, the Architect to the London County Council, was called. He said that when the Municipality of Paris began to scheme a system of direct communication for that city, they adopted as a basis of consideration the underground railways of the County of London. A unified and complete system had been evolved and was being worked out in detail. Roughly, it was an ellipse formed of three irregular curves surrounding the city, but within the line of the old Ceinture Railway. One of the enclosing sections was carried across the city north and south, and there were in addition one other short diametrical length running north and south and two east and west. Thus there were six distinct lines, all worked on the shuttle system, with looped ends to facilitate the return of trains, and minimise the dislocations which would take place owing to a section being blocked by a breakdown. There was a difficulty in the way of adopting such a scheme in London. An ideal scheme would be one giving circumferential lines at various distances apart, and crossing these diametrically by other lines running across the county, and joining the circumferential lines with the centre parts. The existing London tubes did not constitute a unified system. Witness then spoke of the necessity of having "locomotive centre points" and exchanges. There was a great need for rapid locomotion between many of the railway termini and the various centres of traffic within the central area of London, but he would not suggest that such communication could best be afforded by tube railways, though in some cases shallow tramways might be adopted. He then went on to describe how the existing services between the several railway termini might be connected and extended, so as to include them in one system of inter-communication. The City and South London Railway might be extended from its present terminus at the Angel, via King's Cross, St. Pancras, and Euston, to form an interchange station with the Baker-street and Waterloo Railway near the top of Portland-place, and having also interchange stations with the Great Northern and Strand Railway and the Charing Cross, Euston, and Hampstead line. A line which was much needed was one from Piccadilly-circus to Charing Cross, the Law Courts, Ludgate-circus, and the City. Referring to the tramways south of the river, witness advised the abolition of the dangerous termini at Westminster Bridge and Blackfriars Bridge, but continuing the tramway over the bridges and along the Embankment. Dealing with the construction of new streets and routes for broad avenues, witness said that under the London Building Act, 1894, the design in regard to streets was that "provision should be made and powers conferred in order to secure a proper width and direction of streets, and generally with respect to the control and regulation of streets." With a view to providing further relief to rapidly-increasing street traffic in and around the central business area, to provide for the probable increase of traffic in outlying districts, and also for convenience of locomotion designed for special speed, he suggested that broad avenues should have consideration. The lines of such thoroughfares might be chosen to pass through inexpensive property, so as to avoid the purchase of costly interests, such as would be required for the widening of existing thoroughfares. The necessarily heavy outlay might be compensated for by purchasing sufficient property on both frontages and providing for surface tramways and shallow tubes. He suggested that one such route might be on the line of the projected City and Crystal Palace Railway, through Camberwell and Peckham. Owing to the nature of the sub-soil the construction of the line as a tube would probably be very expensive, but if it were constructed in connexion with such an avenue, the additional advantage of shallow subways could be provided. Another suggested route was one running almost directly north and south. Commencing at Southampton-row near the north end of Kings-

way, it would pass in a northerly direction to the junction of Caledonian-road and Pentonville-road at King's Cross. Thence it would continue parallel with Caledonian-road for a short distance, when it would take a north-easterly direction to the county boundary slightly to the east of Finsbury Park. That route could be extended to Muswell Hill. Southward from Kingsway the route would be via Waterloo Bridge, east of Waterloo station, north of St. George's-circus, crossing New Kent-road east of Elephant and Castle, and thence to Camberwell parallel to the Walworth-road. Peckham Rye would be skirted on the west side, and the county boundary reached at a point near Sydenham station. As an alternative on the south side of the river the route might commence near Southwark Bridge, and from that point would join the route as proposed at the Elephant and Castle. Then routes north-east and south-east might be made, and they could be connected by the Tower Bridge. The north-east route would be 4½ miles in length, and would commence near the Tower of London; crossing Commercial-street, it would take a north-easterly direction to the south end of Hackney Marsh, at which point the county boundary would be reached. Leytonstone might easily be connected by this route. On the southern side the direction taken would be across Spa-road and Southwark Park-road. Passing to the west of New Cross station, the route would proceed to Blackheath by way of Lewisham, reaching the county boundary, after passing Eltham, at West Wood. He suggested that the south-west route should commence at the western end of the Victoria Embankment, and if possible should cross Victoria-street near Great Chapel-street. Passing to the south of the new Roman Catholic Cathedral, the route would be through the poorer part of Pimlico. King's-road, Chelsea, which would be widened, would then be joined, and the northern part of Eelbrook Common would be passed. The Thames would be crossed westward of Fulham Palace, and at Barnes Common the boundary would be reached. That route could be continued to Richmond. The shortest of the routes would be that to the west. It would commence at the Uxbridge-road, west of Ladbroke-grove, and after passing Wormwood Scrubbs, it would reach the county boundary at East Acton. Beyond the boundary the route might be continued to join the Uxbridge-road near Ealing station. In connexion with this route witness said that Jermyn-street might be widened, with a prolongation to Kingsway. The north-west route would, it was suggested, commence at the north end of Portland-place, skirting the west side of Regent's Park, crossing Maida Vale at a point near Elgin-avenue and reaching the county boundary to the north of Paddington Recreation Ground. Willesden and Sudbury could be reached by an extension of the route. These suggestions were not put forward by him as definite proposals of the London County Council. Their usefulness would depend on the connexion made across the central area of London. Such extension would, of course, require very careful consideration. The areas particularly in need of additional locomotive service were in the south-east, but there were other areas in the districts of Camberwell, Dulwich, Brixton, and Tooting which could be opened up for building if served adequately. There was a great difficulty in securing land within the central area for the erection, economically, for dwellings for the working classes.

Replying to Sir G. C. T. Bartley, witness said that he was authorised by the Locomotion Committee of the London County Council to give evidence, but he did not think that the Council would care to be hampered by his views in their policy. As to the width of the avenues, he suggested that the minimum should be fixed at 100 ft. However, he would like to see them 160 ft.

By Lord Cobham: His opinion was that the width of the main thoroughfares of London compared unfavourably with those of foreign countries, despite the street improvements which had been carried out of late years.

## THE LONDON BUILDING ACT, 1894:

### A LINE OF FRONTAGE DISPUTE.

THE Tribunal of Appeal under the London Building Act, 1894, sat at the Surveyors' Institution, Great George-street, Westminster, on Tuesday, to hear an appeal by Mr. Charles Botterill, surveyor, on behalf of Mr. Robert Roy, under Section 25 of the Act, against the certificate of the Superintending Architect of Metropolitan Buildings, defining the general line of buildings on the southern side of Fulham-road, Fulham, between Munster-road and Landridge-road, in which part of Fulham-road he further certifies the building site in question to be situate.

The members of the Tribunal sitting were Messrs. J. W. Penfold (Chairman), A. A. Hudson, and E. A. Gruning.

The case for the appellant was conducted by Mr. Botterill, while Mr. Andrews, from the Solicitor's Department of the London County Council, appeared for the respondents.

It was explained that Mr. Roy is the freeholder of land upon which it is proposed to build, and Mr. Botterill argued that the line of frontage should be drawn east so far as Whittingstall-road. In cross-examination he admitted that he had accepted consent from the County Council in respect of the houses in a portion of the road adopted by the Superintending Architect, and had made application in respect of the site under appeal for consent to build in advance of the general line.

Mr. Andrews contended that there was a well-defined line between Munster-road and Landridge-road, and that that line should be adopted, and the certificate of the Superintending Architect upheld. He also drew attention to Section 27 of the Act, under which consent granted by the Council was not to be deemed to alter the general line in that part of the street. In the present instance, to bring out the line of Fulham-road would seriously affect the value of property between the points named. It was, moreover, open for the appellant, when he had a complete scheme, to put it again before the Council. No hardship would thus arise.

Mr. Prescott, the Town Clerk of Fulham, said he was instructed, from the point of view of one with local knowledge, to support the view taken by the Superintending Architect. His Council desired to emphasise the fact that between Munster and Landridge-roads there was already a well-defined line. To deviate from that would seriously interfere with the public interest.

The Chairman intimated that the Tribunal intended to define the line themselves.

Mr. Andrews: Do you propose to follow the lined defined by the Superintending Architect?

The Chairman: We may do it. (To Mr. Botterill): Do you wish our decision to be given to-day, or allow us further time to deliberate?

Mr. Botterill: I would prefer you deferred your decision for a week.

The Chairman: You know there are two or three points of view we want to discuss, and we should prefer to have time to do it.

The decision will therefore be given later.

## BOOKS RECEIVED.

GRAPHIC STATICS. By Jerome Sondericker, B.S., C.E. (Chapman and Hall.)

GAS AND OIL ENGINE MANAGEMENT. By M. Powis Bale. (Crosby Lockwood and Son.)

AN ELEMENTARY TREATISE ON HOISTING MACHINERY. By Joseph Horner, A.-M.I.M.E., (Crosby Lockwood and Son.)

RATING: PRINCIPLES — PRACTICE — PROCEDURE. By P. Michael Faraday. Second Edition. (Sweet and Maxwell. 20s.)

THE "PRACTICAL ENGINEER" ELECTRICAL POCKET-BOOK, 1904. (Technical Publishing Co.)

THE "PRACTICAL ENGINEER" POCKET-BOOK, 1904. (Technical Publishing Co.)

# Correspondence.

## THE LATE MR. BREWER.

SIR,—I think the thanks of the profession are due to you for affording us an opportunity of studying the original drawings of the late Mr. H. W. Brewer, now on view at the *Builder* office.

Referring to Mr. Hayward's letter in your issue for October 31, I trust you will be able to carry into effect his suggestion as to publishing again in a complete and collected form the architectural drawings of this talented artist, whose death we so much deplore.

During past years I have gathered together what reproductions I could find of Mr. Brewer's work, and there must be many more architects who, like myself, would be glad to possess a complete set of his sketches and restorations of ancient architecture.

CYRIL E. POWER.

## TINTERN ABBEY.

SIR,—The work the Office of Woods has done is praiseworthy, but I venture to think some suggestions may not be out of place.

The removal of the ivy is quite right, but it has destroyed the picturesque appearance of the ruin, and the Abbey stands now as a gaunt skeleton. A less destructive creeper, that would not destroy the masonry, would, if planted, restore the original artistic appearance.

The arch between the choir and transept is in a dangerous state. A reverse curve is set up near the apex, and the mortar of the arch stones has fallen out. I think they could be pinned up now without centres. If left alone it may fall at any time.

The gable over the East window should be stayed in some way, and the centre mullion rebuilt. It is very difficult to do this without spoiling the effect of the ruin.

There is a perfect mine of detail in the stones that have fallen, but these are stacked in heaps like road stone. I should like to see a low building, oak and shingle roofed, erected adjoining the Abbey, and all these stones laid out, photographed, and catalogued.

The descriptive notice boards erected by the Office of Woods deserve praise, but it would assist visitors if a large plan naming the different parts were added to these

The Abbey is so unique, and the proportion of every part so good, that every care should be taken to preserve it, and architects should be thankful that at last a Government Department is doing good work at this interesting ruin.

ROBERT PHILLIPS.

*Gloucester*, November 2.

## THE STRANGERS' HALL, NORWICH.

SIR,—In the interesting paragraph in your issue of the 31st ult. mention is made that the Strangers' Hall, recently acquired, was not used by the Walloons and other refugees in that city. On referring to the critical essay "The Walloon Church of Norwich" (Huguenot Society of London), and edited by W. J. Möens, F.S.A., I find mention of more than one hall. The Church of St. Mary-the Less, or St. Mary at Tombland was granted for a time to the Strangers as their hall. "In 1631," says Mr. Möens, 'the hall (*i.e.*, the church) being found too small, the market was removed to the new hall, and in 1637 the church was assigned to the Walloons for divine worship."

Mention is also made of a sale-hall. The Dutch and Walloons had separate halls for the different kinds of drapery to keep them apart, and I cannot but think that this newly-purchased building must have been one of their halls, to which the name "Strangers" was afterwards applied.

The influx of the refugees was so great—especially after the immigration from France, in 1572—that one or two buildings for trade could scarcely suffice. It is, however, most valuable that such a structure has been saved to the benefit of local, and, I may say, English history. At Canterbury, a somewhat similar step was lately taken, in the acquisition of one of the houses of the master weavers now used as a school for modern weaving and art fabrics. Preservation of such historic houses helps to illustrate the annals of our past industries, and, in a word, the progress of a nation. I may add that the first printing press was established at Norwich in 1567, by one Anthony de Solem, who came from Brabant, and printed the Psalms in Dutch.

S. W. KERSHAW, F.S.A.

## RAISING THE LEVEL OF ROADS.

SIR,—I should be glad if you will kindly give me a reply to the following questions:—

A Rural District Council, in re-constructing a number of roads in their district, have raised the level of these roads above that of the original roads, the consequence being that the foot-walks are now higher than the sills of the gateways of the garden paths leading from them to the houses. Owing to this, during times of rain, the pathways and gardens are flooded, and the occupiers cannot reach the foot-walks of the street without having to lay down planks. There is also inconvenience and danger arising from the foot-walk being higher than the gate sills.

Will you kindly say if the Rural District Council, acting as highway authority, had any legal right to raise the roads and cause this condition of things, and whether or not the owners affected have any remedy against the Council? SUFFERER.

*** There is no doubt that a public authority is bound to do work without negligence, and if, in consequence of negligence, injury is caused to a person the latter has the usual remedies. But there must be negligence to found any legal right of action, and care must be taken to differentiate between a substantial injury and an inconvenience. The facts of each case must be minutely considered, in order to enable a person to gauge the state of affairs. The highway authority would clearly be entitled to raise the roadways for the purpose of public convenience, subject to the principles stated above. Are not the inhabitants of this road ratepayers? If they are, they have a right to prevent their representatives from inconveniencing them. They can, by expostulation if necessary, turn them out of office.—ED.

## RATS.

SIR,—I should be greatly obliged if you could, through the columns of your valuable journal, give me advice as to ridding my premises of a plague of rats. We have caught hundreds the last two years, and "still they come." I have been recommended to have the whole of the ground floor concreted (I may say we have no cellarage). Perhaps some of your readers will give me the benefit of their experience.

C. W. LEAKE.

# The Student's Column.

## CONCRETE-STEEL.—XX.

### WORKING STRESSES AND BUILDING RULES FOR BEAMS AND FLOORS.

THE permissible unit stresses on concrete and steel should be determined on a basis providing that the loads coming on any given structure shall not cause stresses likely to endanger its prolonged existence. Considered alone, the static load does not afford a sufficient indication as to the required strength, which must be determined with due regard to the greatest stresses that, even if frequently repeated, will not endanger the safety of the structure.

Recent investigations by M. Considère have shown that such stresses are caused by repetitions of load equal to about two-thirds of the greatest static load. His results, therefore, are in substantial agreement with those obtained by Wöhler's well-known experiments on wrought iron and steel. The consideration of frequent repetitions of load is the more important because it is probable that the adhesion between the concrete and the steel may become weakened in course of time by frequently repeated loads, especially in structures liable to severe shocks and vibrations.

Another point for attention is the possibility of danger from cracks in the concrete, as the weakening of a section where cracks have occurred is necessarily followed by displacement of the neutral axis, as well as by sudden changes of stress. Under the action of live loads, the deformation induced at such points may lead to unexpectedly high unit stress on the steel reinforcement. Further, the existence of cracks in a structure facilitates the admission of moisture, and, in exposed positions, frost may have a tendency to disintegrate the construction.

For these reasons it is very desirable that the proportions of concrete-steel beams should be such as to preclude the establishment of stresses likely to cause cracks of any kind.

A very general rule in practice is to adopt the following permissible unit stresses:—

| | |
|---|---|
| Concrete in compression... | 500 lb. per sq. in. |
| Concrete in tension ..... | 50 lb. per sq. in. |
| Steel in tension..... | 15,000 lb. per sq. in. |

These stresses, however, are only applicable to materials of such qualities as provide for an ample factor of safety, and they would not be justifiable in the cases of poor concrete and steel of low tensile strength.

Professor Brik recommends that the allowable unit stresses should be fixed on the following basis:—

| | |
|---|---|
| Concrete in compression | One-seventh the ultimate compressive strength. |
| Concrete in tension due to bending | One-half the ultimate bending strength. |
| Steel in tension... ... | 14,200 lbs. per sq. in. |

Professor Brik further advises that the tensile bending stresses should first be determined, and that in no case should they be allowed to exceed the permissible unit stresses. For the computation of the reinforcement he proposes that the tensile resistance of the concrete should be neglected, and that the area of steel should be computed on the basis of assumed cracks in the section under consideration.

In all calculations he considers that an addition of from 20 to 50 per cent. should be made to the estimated value of the load to provide for shocks and vibrations.

M. Christophe* recommends that the ratio of the coefficients of elasticity of the concrete and the steel should be taken at 1 : 10, and proposes two standards for the unit stresses:—

| | Safety of 1st Degree. lbs. per sq. in. | Safety of 2nd Degree. lbs. per sq. in. |
|---|---|---|
| Concrete in compression | 427 | 711 |
| Steel in tension ..... | 12,800 | 21,400 |

In each case the tensile resistance of the concrete is to be neglected. The allowable shearing stress on concrete is to be taken at 21 lb. to 35 lb. per square inch.

*Extract from the Building Code of Berlin.*

In the design of floors the static computation must prove that concrete-steel structures are capable of carrying ten times the specified load, including their own weight, and that the steel is able to resist the entire tensile stresses.

*Extract from the Building Code of Dresden.*

Calculations must be based upon the following maximum working stresses:—

| | |
|---|---|
| Concrete in compression.... | 356 lb. per sq. in. |
| Steel in tension ..... | 12,500 lb. per sq. in. |
| Steel in shear ..... | 10,000 lb. per sq. in. |

*Extract from the Building Code of Dusseldorf.*

The proportions of the concrete must be such as to provide for a compressive resistance of 2,140 lbs. per square inch at the age of twenty-eight days. The permissible compressive stress on concrete is fixed at 427 lb. per square inch.

If a higher compressive resistance is proved to be possessed by the concrete a proportionate of the working stress is permitted.

The ultimate tensile resistance of the concrete is taken at 570 lbs. per square inch, but this is not taken into account in settling the reinforcement.

The maximum working stresses on the reinforcement are as follows:—

| | |
|---|---|
| Steel bars in compression | 12,500lbs. per sq. in. |
| Steel bars in tension..... | 12,500lbs. per sq. in. |
| Steel bars in shear..... | 10,000lbs. per sq. in. |
| Steel wire in compression | 14,200lbs. per sq. in. |
| Steel wire in tension..... | 14,200lbs. per sq. in. |
| Steel wire in shear..... | 11,400lbs. per sq. in. |

The reinforcement must be so designed that in addition to taking the calculated tensile stresses it shall also provide for shearing stresses for which no other provision has been made.

*Extract from the Building Code of Frankfort.*

Concrete-steel floors must be able to carry their own weight and ten times the specified load without perceptible deformation. Compressive stress in the concrete must not exceed 356 lbs. per square inch, and all tensile stresses must be taken by the steel reinforcement.

*Extract from the Building Code of Hamburg.*

The permissible working stresses for concrete and steel are not to exceed the following intensities.

| | |
|---|---|
| Concrete in direct compression ..... | 427 lbs. per sq. in. |
| Concrete in compression due to bending | 356 lbs. per sq. in. |
| Concrete in tension ... | 0 lbs. per sq. in. |
| Concrete in shear..... | 22 lbs. per sq. in. |
| Steel in compression... | 12,500 lbs. per sq. in. |
| Steel in tension..... | 12,500 lbs. per sq. in. |
| Steel in shear ..... | 10,000 lbs. per sq. in. |

The steel must be designed to withstand the shearing stresses. For floors liable to vibration 20 per cent. is to be added to the specified loads.

*Extracts from the New York Building Regulations for Concrete-Steel Construction.*

The following notes from the regulations issued last month by the Bureau of Buildings of the Borough of Manhattan, New York, will be found generally serviceable in the design of concrete-steel beams and floors.

Concrete-steel is defined as an approved concrete mixture reinforced by steel of any shape, so combined that the steel will take up the tensional stresses and assist in the resistance to shear.

Concrete-steel construction will be approved only for buildings which are not required to be fireproof by the Building Code, unless satisfactory fire and water tests shall have been made under the supervision of the bureau, and in accordance with the regulations fixed by the bureau and conducted as nearly as practicable in the same manner as prescribed for fireproof floor fittings in the Building Code. Any builder offering concrete steel construction for fireproof buildings must submit such construction to a fire and water test.

Before permission to erect any concrete-steel structure is issued, complete drawings and specifications must be filed with the Superintendent of Buildings, showing all details of the construction, the size and position of all reinforcing rods, stirrups, etc., and giving the composition of the concrete.

Gravel or broken stone concrete is to be used, mixed in the proportions of 1 : 2 : 4; or the proportions may be such that the resistance of the concrete to crushing shall not be less than 2,000 lbs. per square inch after hardening for 28 days. The tests to determine this value must be made under the direction of the Superintendent of Buildings. The concrete used in concrete-steel construction must be what is usually known as a wet mixture.

Only high-grade Portland cements shall be permitted in concrete-steel construction. Such cements, when tested neat, shall, after one day in air, develop a tensile strength of at least 300 lbs. per square inch; and after one day in air and six days in water shall develop a tensile strength of at least 500 lbs. per square inch; and after one day in air and 27 days in water shall develop a tensile strength of at least 600 lbs. per square inch. Other tests as to fineness, constancy of volume, etc., made in accordance with the standard method prescribed by the American Society of Civil Engineers' Committee may, from time to time, be prescribed by the Superintendent of Buildings.

The sand to be used must be clean, sharp grit sand, free from loam or dirt, and shall not be finer than the standard sample of the Bureau of Buildings.

The stone used in the concrete shall be a clean, broken trap rock, or gravel, of a size that will pass through a 2½-inch ring. In case it is desired to use any other material or other kind of stone than that specified, samples of same must be first submitted to and approved by the Superintendent of Buildings.

Concrete-steel shall be so designed that the stresses in the concrete and the steel shall not exceed the following limits:—Extreme fibre stress on concrete in compression, 500 lb. per square inch; shearing stress in concrete, 50 lb.; concrete in direct compression, 350 lb.; tensile stress in steel, 16,000 lb.; shearing stress in steel, 10,000 lb.

The adhesion of concrete and steel is assumed to be not greater than the shearing strength of the concrete.

The ratio of the co-efficients of elasticity of the concrete and the steel is taken as 1 :12.

The following assumptions are to be taken for guidance in the determination of the bending moments due to external forces. Beams and girders shall be considered as simply supported at the ends, no allowance being made for continuous construction over supports. Floor plates, when constructed continuous and when provided with reinforcement at top of plate over the supports may be treated as continuous beams, the bending moment for uniformly distributed loads being taken at not less than W L ÷ 10; the bending moment may be taken at W L ÷ 20 in the case of square floor-plates which are reinforced in both directions and supported on all sides. The floor-plate to the extent of not more than ten times the width of any beam or girder may be taken as part of that beam or girder in computing its moment of resistance.

The moment of resistance of any concrete-steel construction under transverse loads shall be determined by formulæ based on the following assumptions:—

(*a*) The bond between the concrete and steel is sufficient to make the two materials act together as a homogeneous solid.

(*b*) The strain in any fibre is directly proportionate to the distance of that fibre from the neutral axis.

(*c*) The modulus of elasticity of the concrete remains constant within the limits of the working stresses fixed in these regulations.

The tensile strength of the concrete shall not be considered.

When the shearing stresses developed in any part of a concrete-steel construction exceed the safe working strength of concrete, as fixed in these regulations, a sufficient amount of steel shall be introduced in such a position that the deficiency in the resistance to shear is overcome.

When the safe limit of adhesion between the concrete and steel is exceeded, some provision must be made for transmitting the strength of the steel to the concrete.

The contractor must be prepared to make load tests on any portion of a concrete-steel

* "Le béton armé et ses app cations." 1902.

construction within a reasonable time after erection, as often as may be required by the Superintendent of Buildings. The tests must show that the construction will sustain a load of three times that for which it was designed without any sign of failure.

## *OBITUARY.*

Mr. Shaw.—We have to announce the death, on November 3, of Mr. Thomas F. Shaw, of Harlesden, Middlesex, architect and surveyor. Mr. Shaw made the plans and designs for the Constitutional Club at Harlesden, some dyeing and cleaning factories at Willesden for Mr. J. Todd, and for various villas, houses, and other buildings at Ashford and Harlesden, and was employed in laying out many of the new roads in the latter locality.

Mr. James Rhind.—Liverpool papers announce the death of Mr. James Rhind, a local architect of considerable ability and success. Some thirty years ago he commenced his career in Liverpool as assistant to Messrs. W. and G. Audsley, and afterwards started in practice on his own account.

Mr. Sylvanus Trevail.—The death of this architect, under painful circumstances, has on that account attracted some notice in the daily papers, the *Times* committing itself to the absurd statement that he had been President of the Institute of Architects. Mr. Trevail was, however, a man of some ability, and when Chairman of the Sanitary Committee of the Truro Town Council, his monthly reports on the sanitary state of the borough were very ably done, and were frequently quoted in our columns.

## *GENERAL BUILDING NEWS.*

Restoration of Chancel, Alphamstone Church.—Alphamstone Church, Essex, has just been reopened after the restoration of the chancel. The work has entailed the rebuilding of a considerable portion of the fabric and the entire refitting of the chancel, which has been superintended by the architect, Mr. A. Blomfield Jackson.

Wesleyan Church, St. Anthony's, Northumberland.—On the 4th inst., the Wesleyan Church at St. Anthony's was re-opened after alterations. The work carried out comprises the erection of a new entrance porch and screens, new kitchen, vestry, and lavatories, new rostrum and seating in the church, alterations to the infants' school, and the renovation of the building. The work has been carried out under the direction of Mr. J. Walton Taylor, architect, of Newcastle. The contractor for the general alterations is Mr. John Craven; Mr. D. Robertson has done the decoration and painting; Messrs. Reed, Millican, and Co. the lead glazing for entrance screens and porch; and Mr. Norman Lee the plumbing, heating, and lighting.

Methodist Free Church Hall, Whitley.—On the 4th inst. the portal-stone of the new Benson Hall in connexion with the United Methodist Free Church at Whitley Bay was laid. Messrs. Mould and Tasker are the architects, and Mr. A. W. Styan the contractor.

Wesleyan Church, Durham.—A new Wesleyan Methodist Church has been erected at Durham in Old Elvet. The new church and the schools which adjoin it are built of stone. The tower and spire at the north-east corner rise to a height of 100ft. The church consists of nave, transepts, and chancel, in which latter the choir stalls are placed. The interior woodwork of pews, open roof, etc., is of pitch pine, and the tracery windows are filled with ornamental leaded lights. The church is estimated to seat about 630 people, including those in the end gallery, and vestry accommodation is provided for the minister and choir. On the ground floor there is also a ladies' parlour, and on the first floor a guild room. Direct access may be gained from the church to the school premises, which comprise an assembly-room 56 ft. by 30 ft., with three classrooms and an infants' room and kitchen. The buildings are lighted throughout by electricity, and heated by a hot-water system. The total cost of the buildings, including furnishings, is about 11,000*l.*, of which the site cost 2,050*l.* The architects were Messrs. W. J. Morley and Son, of Bradford, and the various contracts have been carried out by the following firms:—Masons' work, Mr. H. Worsnop, Durham; joiners' Mr. J. W. Rudd, Harrogate; plumbers', Mr. J. Lindley, Leeds; plasterers', Messrs. Sugden and Sons, Bradford; slaters', Mr. Blakey, Durham; painters', Messrs. Varley and Son, Bradford; heating, Messrs. Laidler and Son, Durham; leaded lights, Messrs. W. Lazenby and Son, Bradford; mosaic work, Mr. C. Lowes, Durham; and electric lighting, Mr. R. Falshaw, Harrogate. Mr. N. Newbould, of New Wortley, Leeds, was the clerk of the works.

Congregational Church, Keyworth, Nottingham.—A new congregational church has been erected at Keyworth, from the designs of the architect, Mr. R. C. Sutton. The church comprises a nave and chancel, with an organ chamber on the north side and vestry on the south. Accommodation is provided for 250 persons. The roof of the nave is open timber, and the chancel is panelled. The external facings of the building are of brick with stone dressings.

Church, Badshot Lea, Surrey.—The new Church of St. George, Badshot Lea, was consecrated recently by the Lord Bishop of Winchester. The church, which was designed by Mr. Mileham, of London, and built by Mr. G. Kemp, of Aldershot, is of concrete, faced with local flints. It consists of a nave and north aisle, and has been so built that a south aisle can be conveniently added at some future date, and also a tower to replace the present turret, containing one bell. The dressings, columns, and arches are of Bath stone, which is also used in the font. There is a screen of English oak, which divides the chancel from the nave and north aisle. The church is lighted by acetylene gas.

Church, Platt Bridge, Lancashire.—The foundation-stone was recently laid of the new Church of St. Nathanael's, Platt Bridge. The architects of the building are Messrs. G. Bradbury and Sons, of Liverpool, and the builder is Mr. J. Dilworth. The materials used will be, on the exterior, red Ruabon pressed bricks, with moulded terra-cotta for the more ornamental parts. There will be three entrances through the grounds of the church, the one under the tower being available for the main building, and for the morning chapel. On the south side of the church a tower will be erected 17 ft. square and 95 ft. high from the ground level, in which it is proposed to place a clock and a peal of bells. The total length of the church is 120 ft., with a breadth of 86 ft. in the widest part. The interior of the church will contain a nave 77 ft. 6 in. long and 26 ft. wide, chancel 31 ft. long with a width of 24 ft. On the south side of the chancel there is to be a morning chapel 24 ft. 6 in. long, 18 ft. 6 in. wide, and on the north side an organ chamber, choir vestry, and clergy vestry. On the north and south side of the nave there are to be aisles 12 ft. 6 in. wide, and running the whole length of the nave. The nave is 32 ft. high to the eaves, 51 ft. to the ridge, and over the nave, chancel, side aisles, and morning chapel there will be placed an open timber roof. The whole church will be heated with hot-water pipes. Mr. Joseph Speakman is clerk of works.

Wesleyan Chapel, Ynysybwl, Glamorganshire.—The foundation-stones were laid recently of a new chapel erected for the English Wesleyan denomination at Ynysybwl. The building, which is being erected in Thompson-street, consists of a basement and upper floor, the former to be used as a schoolroom to accommodate 100 persons, while the upper portion will comprise the chapel proper, capable of seating 250 persons, and will be built of native stone. The architect is Mr. Arthur O. Evans, Pontypridd, and the contractors, Messrs. Williams Bros., Ynysybwl.

Mission Church, Morningside, N.B.—A new mission church is now being erected at Morningside by the parish church of Cambusnethan. The seating accommodation is for 240 people, and the estimated cost is 500*l.* The architect is Mr. James Cowie.

Hackney Union Children's Homes, Ongar.—These buildings, the foundation-stone of which was recently laid, will consist of twelve blocks, each self-contained and under the care of one or more foster-mothers, and will be set out round an ellipse, the entrance and porter's lodge being next the London-road. To the north of the entrance will be the administrative block, arranged round a quadrangle. The front portion, a two-storied building, will contain on the ground floor: superintendent's office, dining-room, kitchen and offices, committee-room, waiting-room, book-room, and committee's lavatory. On the upper floor, superintendent's apartments, and two small bedrooms to be used for girls in training who are about to leave the home for general service. On the north side of the courtyard a one-story building will be used for coal stores and packing cases. This building has been designed to enable it to be utilised at some future time, if required, for a boiler-house. The building on the east side of the courtyard will contain the matron's office, needle-room, clothing store, boot store, and lavatories, also the general laundry, comprising a receiving-room for dirty linen, washhouse, drying-room, ironing-room, and distributing-room for clean linen. On the west side will be the goods receiving-room, general store and delivery-room, various smaller stores for food and hardware, carpenter's and plumber's workshops, with ample lavatory accommodation. To the south of the entrance will be the receiving house, a two-story building for twenty children, so arranged that it can be used for either or both sexes. It will contain kitchen and living-room, two day-rooms, dormitories of various sizes, apartments for foster-mothers, lavatories and spray baths, cloakrooms, stores, and the usual offices. East of the administrative block two pairs of semi-detached cottages, with accommodation for 15 children each (60 in all), will be placed. These are somewhat similarly designed to the receiving house, but have separate living-rooms to each cottage. At a short distance from these cottages will be two detached houses, for 40 children each. These are planned on three floors, and will contain on the ground floor, play and reading-rooms, foster-mother's sitting-room, hat and cloakroom, lavatories, spray baths and stores. In the rear of each house and connected by a short corridor, a one-story building will contain the dining-room, kitchen, scullery, and larder. The upper floors will be arranged as dormitories, clothes and linen stores, lavatories and bathrooms, foster-mother's and spare bedrooms, etc. On the south side of the ellipse will be four similar houses. The general latrines, washhouses, play sheds, and coal stores are to be placed in separate buildings in the rear of each block. To the east of the site, and isolated from other buildings, is planned the infirmary, a one-story building arranged on the pavilion system, with accommodation for 20 beds. There will be two pavilions, each containing a ward for eight beds, and an isolation ward for two beds, with nurses' room and storerooms between. These will be connected by means of a covered corridor to a central block used for administrative purposes, and containing doctor's room and dispensary, kitchen, stores, and nurses' quarters. The bathrooms, slop-sinks, and water-closets are to be provided in separate buildings, having access from the connecting corridor. Externally, a cottage effect has been sought in the design of the elevations generally. The materials used will be red bricks, cream-coloured rough-cast, and red tile roofs with projecting eaves, all the detail being of a simple character. The works are being carried out by Messrs. McCormick and Sons, from the designs and under the superintendence of the Board's architect, Mr. W. A. Finch, of London, the clerk of works being Mr. J. T. Hodgson.

A Restaurant for Women, London.—A new restaurant and home for women is to be provided at 44, Mortimer-street, and the foundation-stone of the building has just been laid. Included in the building will be a restaurant, dining-hall, "rest-room," and small bedrooms and dormitories, divided into private compartments, to accommodate 120 women. Professor Beresford Pite is the architect.

Parish Room, Sheffield.—A new parish room, which has been erected by the congregation of St. Silas' Church as a memorial to the late vicar, in Hanover-street, Sheffield, was opened recently. The new room provides accommodation for 400 persons, and it is lighted throughout by electricity. The contractors for the building were Messrs. D. O'Neill and Sons, and the architect was Mr. W. J. Taylor.

All Saints' Church, Elland, Yorkshire.—This new church, of which the foundation-stone was laid on August 11, 1900, was opened on the 4th inst., by the Archdeacon of Halifax. The site, which was given by Lord Savile, has a considerable fall from west to east, and the architect has taken advantage of this to place a large crypt and vestries under the chancel and chapel, connecting the same with the church by a broad flight of stone steps. The plan of the church consists of a nave, 111 ft. in length and 30 ft. 6 in. in width, with adjoining north and south transepts. The north transept forms a nave to the Lady Chapel, and has accommodation for 100 adults. The south transept has accommodation for 80 adults, and has a double archway opening into the passage and staircase leading to the vestries, and a large archway above opens into the organ chamber. The chancel is 45 ft. in length and 27 ft. 6 in. in width, and is so arranged with arches north and south that a view of the high altar is obtained from the transepts. North and south chancel passages are formed for the use of returning communicants. A sacristy is placed in the south side of the chancel. The nave is designed to have six bays of 18 ft. centres, and a wide-spreading arch at the west end opening into the baptistry, with its sides curving into the main west entrance and porch. The nave arches are comparatively low, rising only to a height of 18 ft., and being separated from the clearstory by an ornamental string course. Each bay of the nave has two clearstory windows, with sills ornamented by open tracery work. The height of the nave walls is 30 ft., and the apex of the roof is 43 ft. from the nave floor. The roof of the chancel and nave is of barrel form, while that of the transepts and chapel is of open timber form. The church is lighted by incandescent gas. The church, which is built of Yorkshire stone, but faced internally with red brick, has been carried out by Messrs. Charnock and Sons,

of Halifax, the architect being Mr. Geo. H. Fellowes Prynne, architect, Queen Anne's-gate, Westminster. Owing to want of funds, only the chancel, chapel, transepts, and three bays of the nave have been built at present. The present outlay is about 12,000*l.* An illustration of the exterior was given in our issue of August 14, 1897.

CHANCEL, PARISH CHURCH, LOUDWATER, BUCKS.—The foundation-stone for the new chancel designed to be added to the Parish Church, Loudwater, was laid by the Bishop of Oxford on October 29. The old church is a somewhat curious example of the worst type of eighteenth century church design, with a regular three-decker pulpit at the east end and the altar placed under same. The building is not only noted for its extreme ugliness, but is in a sad state of repair, besides being wholly unsuited for modern requirements in worship. The present contract, being carried out by Mr. H. Flint, builder, of High Wycombe, is for a new chancel, which is designed by Mr. Geo. H. Fellowes Prynne, architect, Westminster, with a view to rebuilding the body of the church eventually. The present outlay is about 1,800*l.*

ALL SAINTS' CHURCH, EALING.—The foundation-stone has been laid of this church, which will form a memorial of Spencer Perceval, Prime Minister in 1809-12. The site forms a part—given by Mr. Leopold Rothschild—of the grounds of the house, Elm Grove, occupied by Spencer Perceval at the time of his assassination in the lobby of the House of Commons, by Bellingham, on May 11, 1812. The cost of the fabric, about 12,500*l.*, will be defrayed out of a bequest made in that behalf by Miss Frederica Elizabeth Perceval, the stateman's last surviving daughter, who died at Ealing two or three years ago. The architect of the church is Mr. W. A. Pite, whose designs are based upon a rendering of the Early Perpendicular style. Stamford stone, with rock-faced walling in dropped courses, will be used for the exterior, marble for the floor and chancel walls, and fumed oak for the pulpit, stalls, and screen. All Saints' will form a chapel-of-ease to the parish church of St. Mary.

LIMEHOUSE CHURCH INSTITUTE.—A contract has been entered into for the erection of the Limehouse Church Institute in connexion with St. Anne's Church, Limehouse, and the foundation-stone was laid on the 7th inst. The new building is being erected in Three Colt-street upon a very irregular site, where formerly stood the old church schools. Accommodation will be provided for girls' factory club and girls' friendly society, boys' club and men's club, billiard and games rooms, and gymnasium. The building will be of two stories, and the various rooms on the upper floor will be divided by sliding partitions, which when occasion requires enable this floor to be used as a large hall capable of seating about 400 people; there will be a platform at the end of the hall, with retiring-rooms and kitchen, etc., behind same. Staircases formed of Victoria stone are provided at each end of the building, and there will be three entrances. The façade of the building to Three Colt-street will be faced with deep buff-tinted terra-cotta, and is designed in the Later Renaissance style of English architecture. The cost of the scheme will be about 7,000*l.* Mr. W. Henry White is the architect, and the contract has been taken by Messrs. Watts, Johnson, and Co., of Limehouse. Messrs. Doulton and Co. are supplying the terra-cotta work. The trowel used at the laying of the foundation-stone was specially designed by the architect. It consisted of a dull silver blade with onyx handle enclosed in a strapwork of silver, wrought and chased, and was made by Mr. J. Havenhand.

PICKERING GRAMMAR SCHOOL.—Mr. J. Bilson, of Hull, has been appointed architect of the new buildings for Lady Lumley's Grammar School at Pickering, N.R. Yorkshire. The present premises were erected in 1828. The school was endowed in 1770 with lands in the parish which have since been vested in trustees.

NEW BUILDINGS IN BRADFORD.—The Building Committee of the Bradford Corporation, in their annual report for the year ended the 31st August, state that 587 plans were approved out of a total of 883 submitted. Included in these plans were 1,538 dwelling-houses, 41 houses and shops, 14 warehouses, 6 mills, 23 workshops, 36 lock-up shops, 418 sundry buildings, 74 streets, and 133 back roads—a total of 2,283, as compared with 1,817 last year and 1,780 in 1901. During the twelve months 83 cases of alleged dangerous buildings have been reported. These cases included houses, chimney stacks, and other premises. In 53 cases external walls to houses and other premises and 13 chimney stacks have been rebuilt; and three roofs and one cornice have been repaired.

HOSPITAL, MONMOUTH.—A new hospital and dispensary has just been open at Monmouth. It has cost close upon 8,000*l.* to erect and furnish. The builders were Messrs. Collins and Godfrey, of Tewkesbury, whose acting foreman has been Mr. W. J. Linley. The architect was Mr. Richard Creed, of London.

BAPTIST CHAPEL, TATWORTH.—The foundation stones have just been laid of a new Baptist Chapel at Tatworth. The present building will be erected in the rear portion of the site, and consists of a school-room 36ft. by 18ft., with three class-rooms (each about 10ft. by 12ft.), and another apartment with furnace, etc., behind. The dividing partition between the school-room and class-rooms will be folding doors, so arranged that the whole may be carried into one room for the purpose of a chapel gathering. The building will be carried out in red Pinhoe brick, with Candy's white (or buff) terra-cotta dressings, and slated roof. The floors throughout will be of wood blocks. The contract has been secured by Mr. R. Harris, of Wadeford, and Mr. F. Sidwick, builder, of Chard, will be associated with him in the work, the architects being Messrs. Symes and Madge, of Chard.

DRILL HALL, CRESWELL, NOTTINGHAM.—The new drill hall at Creswell, which has been erected for the Creswell Boys' Brigade, was opened recently. The building is of brick, with stone dressings, and will serve the purposes of a drill hall during the week, and of a Sunday school for the Wesleyan body on Sundays. The hall itself is 65ft. by 35ft., and is capable of seating 450 persons. The building also contains a stage with ante-rooms, armoury, games room, and kitchen. There is also a turret and clock. A gymnasium apparatus is provided. The interior of the building is lit by electricity. The hall was designed by Mr. P. Houfton, architect, of Chesterfield, and Mr. A. F. Houfton, of Mansfield, was the contractor. The entire cost of erection is 1,550*l.*

CLUB, BOLDON COLLIERY, DURHAM.—The Boldon Colliery Working Men's Club has just been opened. The premises occupy a site on the new road to Brockley Whins Station. They are one story in height, and cover an area of 880 square yards. The building is of red facing bricks, with stone dressings and green slated roof. The interior comprises corridor running the whole length of the building, and terminates with an octagonal hall with glass dome. On each side of the corridor are the various suites of rooms which comprise the building—billiard-room, 42ft. by 22ft.; refreshment-rooms, with cellar in the basement; smoke-room, newspaper and magazine-room, and games-room, along with the usual cloak-room, lavatories, etc. Adjoining the club, and with access to the same, is the steward's house, with cooking kitchen. The contractor was Mr. R. M. Storey, and the architects were Messrs. Vaux and Mark, Sunderland.

SUNDAY SCHOOL, LANCASTER.—Plans for this building have been prepared by Mr. Spencer E. Barrow, architect. The elevation of the building will be of brick, with stone base, and dressed fronts, having a frontage to Fenton Street of 48 ft. There will be an entrance hall with class-rooms 16 ft. by 14 ft. on each side leading into the assembly hall, which is to be 47 ft. by 33 ft., and will accommodate 238 in the body of the hall, and 62 in the gallery, a total of 300. In the basement there will be a kitchen, bath-room, and dressing-room. On the west side of the hall there will be retiring rooms and a workshop for lessons in wood-carving, etc. Then on the first floor there will be a committee-room 27 ft. by 18 ft. and a reading-room 27 ft. by 14 ft.

SCHOOL, FRASERBURGH, ABERDEEN.—The Fraserburgh School Board have now adopted plans for their new Higher Grade School. Competitive designs were advertised for, and in all sixteen different designs were lodged by different architects. After deliberation, the board adjudicated the first place to the designs lodged under the motto "Scholastic," and it was found that Messrs. D. and J. R. M'Millan, architects, of Aberdeen, were the successful competitors. Instructions have now been given to the architects to have the work proceeded with at once. The school is arranged to accommodate 650 scholars, and the estimated cost of the building is 6,000*l.* The plan has been schemed so that only two classrooms in the whole building face the north, namely, the art room and the manual instruction room. There is a gymnasium on the ground floor 50 ft. by 26 ft., together with eight class-rooms and two teachers' rooms, the latter being arranged near the respective front entrances for boys and girls. On the first floor are five ordinary classrooms, also a manual instruction room, an art room, the science department, consisting of chemistry laboratory and physics laboratory, with a balance room adjoining. The large classroom set aside for cookery and laundry work is also placed on this floor, and has a scullery attached. In addition to this, there are arranged on this floor two teachers' rooms, one at each end of the building. The architects have also provided for a library and a stationery store. There are assembly-halls for the girls and boys respectively, each 24 ft. by 22 ft. The respective staircases are arranged in a recess. These assembly-halls are then repeated on the upper floor, a well in each case lighting the ground floor hall, and on each floor there is a corridor 8 ft. wide. The gymnasium is planned in the centre of the block on the ground floor, on the north side, and by means of throwing back glazed folding partitions, the two centre classrooms immediately on the south, together with the intervening corridor, can be thrown into the gymnasium, which would then make a hall 56 ft. by 54 ft. The extended designs are Scotch Baronial in character.

PEOPLE'S PALACE, BELFAST.—In the district of St. George's Ward, Belfast, a scheme which is to cost something like 12,000*l.* is now being developed. It is known by the title of the "People's Palace," and will embrace the following institutions:—(1) Large hall for general social purposes and entertainments; (2) minor hall for similar purposes; (3) the formation and carrying on of a medical mission for assisting the poor, and medical and surgical advice and treatment given; (4) to provide a general rendezvous-room for the people of the neighbourhood under healthy social conditions; (5) swimming bath and gymnasium for the young men of the neighbourhood; (6) playground and covered games' courts for the children; (7) cripple young men and women's Industrial Training Institute for the cripples of Ireland; (8) a residential home for lonely factory and mill girls; (9) the Old Folks' Home, a home for pensioners and those incapable of work, where husbands and wives can live together; (10) free library and reading-room; (11) a lodging-house for women; and (12) a lodging-house for men. The committee are only taking up at present the portion requiring immediate attention. This portion they hope to finish in about a year, and the outlay is roughly put at 6,000*l.* Mr. William J. W. Roome is superintending the work.

PUBLIC LIBRARY, STOKE NEWINGTON.—The foundation-stone of an addition to the Stoke Newington Public Library was laid on the 31st ult. The existing buildings occupy an area of about 4,960 square feet. The extension, which includes a surface area of something like 7,000 square feet, provides for the extension of the lending library, a reference library of about 42 ft. by 34 ft., a children's library of about 42 ft. by 17 ft., a lecture-hall about 36 ft. by 54 ft., together with librarian's room, lavatories, and the necessary appurtenances. The lecture-hall will be finished with a glazed brick dado, red brick walls and an open timbered roof. In the basement will be provided a heating chamber, about 56 ft. by 16 ft., and on the first floor there will be a committee-room about 42 ft. by 16 ft. The architect is Mr. Sidney G. Goss, of Broad Street Buildings, E.C. The builders are Messrs. William Shurmur and Sons, Ltd., of Upper Clapton, N.E.

MISSION HALL, HULL.—On the 29th ult. the foundation-stone was laid of a new mission hall, which is to replace the present old building in George-yard, off Alfred Gelder-street, Hull. The new building, which has a frontage of 130 ft. to Alfred Gelder-street, and a depth of 100 ft. to 120 ft., is arranged with a central main entrance 13 ft. wide, giving direct access to all parts of the building, flanked by six shops, three on each side of the main entrance, each shop having basement storage. At the north and south ends of the frontage additional entrances lead direct to the Sunday school and vestries arranged in a sub-basement, and a further entrance 8 ft. wide is obtained from George-yard. The rooms over the shops are utilised as classrooms, secretary's room, caretaker's house, etc., and the main hall and school are set back from the street for quietness. The most important feature of the scheme is the large hall, 75 ft. 6 in. wide by 103 ft. long, which is arranged in the centre of the site, and is approached from the main entrance vestibule by stair-cases on the right and left hand respectively, and with its gallery round three sides and choir platform provides accommodation for 1,750 people. Retiring-rooms, cloak rooms, and stewards' rooms are arranged in connexion with the hall. A Sunday school 52 ft. wide by 57 ft. long is arranged in a sub-basement at a level of 5ft. 6 in. below the front street, and provides seating accommodation for 600 people. A church parlour, 22 ft. wide by 22 ft. long, and fifteen classrooms of varying dimensions, choir and minister's vestry are also provided. At the boys' side adjoining the entrance from George-yard is arranged a boys clubroom, 25 ft. long by 15 ft. wide, also available, when required, as a waiting-room in connexion with the soup kitchen, which it adjoins. The buildings are late Gothic in style. The main façade to Alfred Gelder-street will be carried out in Ancaster stone. A tower over the main entrance will be in Portland stone, rising to a height of 106 ft. above street level. The external facing of the new buildings to the yards will be in white stock bricks. Inside, the entrance corridors and staircases will be in white glazed bricks, the schoolroom having a dado of golden brown glazed bricks with plastered

walls above. The roof of the main building will be of wrought iron, with its curved ceiling in decorative plasterwork. The ceilings under the gallery and of the corridors will be groined in plaster. The floors generally will be fireproof, of concrete and iron, and those of the entrance vestibule, corridors, and lavatories will be finished in marble mosaic, and those of the Sunday schools, church parlour, etc., in pitch-pine wood blocks. The warming and ventilating of the buildings will be carried out by low-pressure hot water heating apparatus, with ventilating radiators, and assisted by two electric fans. The erection of the building has been entrusted to Mr. F. Beilby, and the following were the sub-contractors:—Masonry, Messrs. Quibell and Son; carpenter and joiner's work, Messrs. R. Finch and Co.; plumber and glazier's work, Mr. T. G. Padgett; and slater's work, Messrs. Wilde and Son—the whole being under the supervision of Messrs. Gelder and Kitchen, architects, Hull.

WORKMEN'S DWELLINGS, LIVERPOOL.—Workmen's dwellings are being erected at Liverpool to supplant 511 insanitary houses in the neighbourhood of Hornby-street. The new buildings when completed will afford accommodation for 2,246 persons, and will cost in all 150,000*l*. The total area to be dealt with is 26,025 square yards, in the neighbourhood of Hornby-street, Tatlock-street, and Raymond-street. The site is being acquired by the Corporation as an "unhealthy area" under the powers of the Housing of the Working Classes Act, 1890. The main street (Hornby-street) is at present 36 ft. wide, and runs from Vauxhall-road to Scotland-road. In addition to the insanitary property to be demolished there are 23 insanitary houses, making a total of 534. The population of the insanitary houses is 2,431, and by the terms of the Act the Corporation are required to provide accommodation on the area for the number of persons dispossessed. The new dwellings comprise 23 blocks, or 445 dwellings, which, it is estimated will accommodate 2,446 persons. There are 48 four-roomed dwellings, 270 three-roomed dwellings, 90 two-roomed dwellings, and 36 one-roomed dwellings, a keeper's house, seven shops, and a recreation ground containing about 1,755 square yards. In Hornby-street the new dwellings are set back from the present line of street, so that for a considerable portion of the length of this street the width between the main line of the new dwellings will be 70 ft. Each dwelling is provided with separate sanitary accommodation. The buildings as a whole are three stories in height, each living room containing at least 150 superficial ft., the principal bedroom 125 superficial ft., the second bedroom 100 superficial ft., and the third bedroom, where one is provided, between 80 and 90 superficial ft. The average height of the rooms is nine ft. clear. The materials used in the construction are local grey brick with red brick dressings, buff terra cotta being used in the entrances. All the staircases are lined with glazed bricks, the roofs slated, and the floors constructed with small iron joists, with coke breeze concrete, on which the flooring boards are nailed direct. The ashes are discharged into bins by means of shoots at the back, and are collected daily by carts. The first portion of the scheme has involved the demolition of 145 houses, and it is interesting to note that 71 per cent. of these tenants have availed themselves of accommodation provided by the Corporation in the immediate neighbourhood. The new dwellings on the site of this demolished area contain 138 houses; and it is proposed that when the first portion is completed another portion will be demolished, and the dispossessed tenants from such portion will occupy the new houses now in course of erection. In this manner it is thought that the whole scheme can be carried out in three portions. The contractors for the first portion are Messrs. Joshua Henshaw and Sons, the amount of the contract being 23,382*l*. The plans for the whole of the scheme have been approved by the Local Government Board, who are now considering the terms upon which the Corporation shall be allowed to borrow the money, and it is hoped that, having regard to the increased period allowed by the Housing of the Working Classes Act, 1903, the board will allow 80 years for the repayment of the loan for the purchase of the land, and 60 years for the repayment of the loan for the erection of the buildings. With regard to the rent, it is estimated that if the one-roomed dwellings are let at 2s. per week, the two-roomed at 3s. per week, the three-roomed at 4s., and the four-roomed at 5s., and taking the estimated value of the land for dwelling-house purposes, the scheme will return 3 per cent., net. The work has been carried out from the plans of the Deputy-Surveyor, Mr. Turton.

PORCH, ST. HELEN'S, NORTH KENSINGTON.—The wooden porch at the entrance of this church has been removed and a permanent one put in its place. The work has been carried out by Messrs. Barrett and Power, under the direction of the architect of the church, Mr. Percival Currey, London.

## *SANITARY AND ENGINEERING NEWS.*

RAILWAY STATION, JOHANNESBURG.—As we recently announced, a design for the proposed new railway offices and station for Johannesburg has now been chosen. The Government Architect had been asked to report upon the eight designs submitted in competition, each of which bore a number and no name. Mr. Bevan came to the conclusion that two only were worthy, for reasons which he stated, of further consideration, namely, numbers 1 and 5. He considered number 1 the more suitable, this fulfilling all the requirements that he thought proper. "I fear, however," he added, "it cannot be carried out under 420,000*l*. Were the offices reduced in height, the design need not suffer thereby, and I see no reason for its rejection on the score of cost. It is suggestive in its treatment of the late Mr. Brydon's work. It is scholarly and refined, and I am glad to report that so able a design has been submitted. The building, if carried out as designed, would be worthy of its position, and purpose, and would be an ornament to the city." The building comprises all the offices for the management of the railways in addition to the waiting-rooms, retiring-rooms, restaurant, and all the necessary requirements of a modern railway terminus. The main block is bounded on the west by Rissik-street, on the south by De Villiers-street, and on the east by Joubert-street, and is 120 ft. high, 240 ft. long, and 220 ft. wide. In addition, there is the wing 260 ft. long, 50 ft. wide, and 60 ft. high. The total length is, therefore, 500 ft. The principal entrance is in the centre of the main block facing De Villiers-street, and on each side are grouped the stairs and lifts to the upper floors. Passing through the chief entrance the main central hall is reached. This is 120 ft. by 140 ft., and is covered at a height of 30 ft. by a flat roof with a dome 50 ft. in diameter over the centre. The various waiting-rooms, ticket-offices, restaurant, etc., are grouped round this hall, and are lit from it, and also on their other side from the streets on each side of the building. Going through the hall the platforms are reached, a bridge with steps down to each platform connecting the whole. The upper floor will be given over entirely to the general offices, with the exception of the two top floors; these will be planned as chambers. The building will be fireproof throughout. According to intention it will be heated by hot-water radiators in corridors and open fires in offices, with electric fans for extract ventilation. The total cost of the building as designed, including hydraulic, heating, and electric plant, was estimated by the architect at 385,000*l*. The successful architect, Mr. T. A. Moodie, A.R.I.B.A., is 29 years of age, and at the time of the competition was architect to the C.S.A.R. He gained his experience first in Glasgow, and afterwards in London, where he was in the service of the County Council. He was also a silver medallist in the Soane Medallion Competition of the Institute of Architects.

SEWERAGE WORKS, MORPETH.—The new sewerage works at Morpeth were opened on the 30th ult. The new scheme consists of the laying of main outfall sewers along each side of the river to intercept the existing sewers of the town which discharge direct into the River Wansbeck at various points, and which main sewers were laid so as to convey the whole of the sewage of the town to the Low Stanners. This work entailed the crossing of the river by means of three inverted siphons formed of cast-iron pipes embedded in concrete. The whole of the sewers were laid in straight lines with manholes at every angle and change of gradient. In addition to this a complete system of surface water drainage was constructed in the main streets so as to convey the whole of the street water into the river, by this exclusion saving a considerable cost for pumping and treatment. At the Low Stanners an underground storage tank has been constructed having a capacity of 75,000 gallons, adjacent to which is the pumping station, which consists of a brick building in which is placed the pumping machinery. The plant consists of Tangye's gas engines driving centrifugal pumps, all of which are in duplicate. The sewage is pumped at the rate of 50,000 gallons per hour through a 14 in. cast-iron pumping main, to the site of disposal works situated on the Parish Haugh, where it is discharged into a receiving tank. From this tank the sewage flows by means of a floating arm into two open liquefying or septic tanks. From these tanks the sewage is then conveyed to two circular continuous filters, 76 ft. diameter, on to which it is distributed by means of two of Adams' revolving arms at the rate of 200 gallons per square yard per day. These continuous filters are composed of concrete floors sloped to the outer edge, on the circumference of which are brick walls pigeon-holed, enclosing the filtering medium, which is of hard burnt clinker 6 ft. in depth. The sewage in these filters is purified by means of aerobic bacteria, which have a plentiful supply of air given them by means of air pipes carried from the circumference to the centre of the filters, and the effluent or purified sewage flows into wide channels constructed round each filter. The works are capable of dealing with three times the dry weather flow, and any excess over this quantity, and up to six times the dry weather flow, is treated in a storm-water filter adjacent to the works, which is some 3 ft. in depth, filled with large clinkers, and where the rate of purification is not to exceed 500 gallons per square yard per day. The works were designed by Messrs. D. Balfour and Son, of Newcastle-on-Tyne and London, and have been carried out by Mr. J. G. Kirtley, contractor, of Sunderland, with Messrs. Humble and Coulson as clerks of works. The sub-contractors for the pumping plant were Messrs. Tangyes, Ltd., of Newcastle and Birmingham, and for the revolv-distributors Adams' Hydraulics, Ltd., of York, and the whole of the castings were supplied by Messrs. Swinney Bros., of Morpeth, and the fireclay pipes by the Lambton Collieries, Ltd., of Fence Houses.

## *MISCELLANEOUS.*

PROFESSIONAL AND BUSINESS ANNOUNCEMENTS.—The Sprague Elevator Company, of New York, have arranged with the Metropolitan Engineering Association, of 4, Queen Victoria-street, E.C., to act as their agents for the British Empire and Europe.

REREDOS, ST. GEORGE'S CHURCH, EDGBASTON, BIRMINGHAM.—The new reredos, which has been erected at a cost of over 700*l*., raised by the subscriptions of the congregation in St. George's Church, was dedicated on the 1st inst. The reredos, which is of oak, and covers the whole of the east wall of the chancel below the window, is divided into five parts, the centre being higher than the sides. The top is 20 ft. above the altar steps. There are a number of niches with canopies, and it is hoped that in due time all will be filled with figures. In the centre niche has been placed a carved figure of our Lord, in the act of blessing. The side niches and canopies will contain figures of the four evangelists. The lower portion of the reredos is filled with tracery in panels. The reredos is the work of Mr. Bridgeman, of Lichfield, and is from designs by Mr. J. A. Chatwin.

THE ABBEYS OF THE CISTERCIAN MONKS.—The illustrated lectures by Professor Capper in connexion with the new School of Architecture at the Manchester Victoria University are attracting considerable interest, and at the one given on the 3rd inst., Professor Capper dealt with the abbeys of the Cistercians. From the Benedictine order, he said, was evolved the Cistercians, who were differentiated from the Benedictines by a desire to withdraw from the world, and so they built their abbeys, as a rule, in the most secluded spots they could find. The Cistercian order spread with great rapidity, and the strictness and ascetism of their practices were reflected in the structure of their abbeys. The abbey of Kirkstall, near Leeds, was a famous and typical Cistercian erection of the middle of the twelfth century, of simple but majestic architecture, with the constructive side emphasised. Furness Abbey was another good illustration, though originally it belonged to another order. Roche Abbey furnished further evidence of simplicity. Away from the haunts of men, in valleys rather than on the heights, did these monks choose their building sites, and invariably was there a stream near. This was generally diverted to serve a drain which ran underneath the abbey. In a sense the Cistercian monks might be termed the pioneers of sanitation—at any rate, so far as the water carriage of sewage was concerned. As the lecturer pointed out, Cistercian architecture only survived in its ruins, but he placed on the screen views of the abbeys mentioned and of several others.—*Manchester Courier*.

A MEMORIAL TO CHARLOTTE YONGE.—A memorial, erected by public subscription, has been set up in the parish church of Otterbourne, Hants, in honour of the late Miss Charlotte Yonge. It consists of a rood beam and chancel entrance, designed by Mr. Kempe.

CLIFTON COLLEGE WAR MEMORIAL.—This memorial will take the form of a statue of St. George clad as a mailed knight, standing upon a pedestal. The figure will be executed by Mr. Drury, A.R.A., and the pedestal will be from the designs of Messrs. W. S. Paul and R. C. James, architects.

VICTORIA STATUE, NEWCASTLE-UNDER-LYME.—On the 5th inst., a statue of the late Queen was unveiled by the Grand Duke Michael of Russia at Newcastle-under-Lyme. The statue was cast by Mr. Burton.

UNDERGROUND ROOMS IN ST. PANCRAS.—The Public Health Committee of the London County Council reported as follows at the meeting on Tuesday:—On October 13 last we re-

ported that we had been in correspondence with the St. Pancras Borough Council on the subject of the large number of underground rooms illegally occupied in that borough, and we stated that we proposed to report again on the question in a month's time. The result of the inquiry which had been made by the Council's Medical Officer was that over 400 tenements in the borough, affording accommodation for more than 1,000 persons, were found to be occupied separately, although they contravened the provisions of the law relating to underground rooms beginning to be occupied after 1855. Ten of these tenements, accommodating 29 persons, did not even conform to the standard prescribed for underground rooms let antecedent to 1855. When this report was communicated to the borough council, that body caused an inspection to be made of the underground rooms in the borough, and the borough Medical Officer reported that there were 640 rooms in which the conditions were practically irremediable, and suggested that the rooms should be dealt with consecutively and at intervals, "so as to avoid the serious effects of suddenly displacing a large population." The borough council intimated on September 23 last that notices had been served on the owners of 49 of these illegally-occupied underground rooms, requiring them within three months from the date of the service of the notice to discontinue to suffer these rooms to be let or occupied as dwellings contrary to the statute, and that the remaining cases were being dealt with. When the period of three months has expired we propose to make further enquiries as to the result of the action taken by the borough council, and to report again on the subject.

THE CARPENTERS' COMPANY.—The Company will hold their annual examination in Sanitary Building Construction in their Hall, on November 26 and 28. Candidates intending to enter for examination should send in their names without delay.

ARCHITECTURAL CRAFTSMEN'S SOCIETY, GLASGOW.—At the third general meeting of the Architectural Craftsmen's Society, held in the Technical College, 204, George-street, a lecture was delivered on the Church of Santa Sophia, Constantinople, by Mr. Chas. Gourlay, Professor of Architecture at the College. Beginning with a general review of the history of the church, Professor Gourlay proceeded to deal with its architectural design, which he described as the perfection of Byzantine style, combining as it does the beauty of the Basilicas of the Greek church plan with the large dome over the central area, but excelling all these in the dignity of its design and the grandeur of its interior. He then dealt with the materials used, both in the construction and decoration of the church. Many points in the detail of its architectural features were sketched on the blackboard, and interesting features referred to. Finally, the surrounding buildings and present state of the church were dealt with. The lecture was illustrated by large-scale plans and by photographs and prints.

MEMORIAL WINDOW, WESTON-SUPER-MARE.—A memorial window has been unveiled in the parish church, Weston-super-Mare. It is the work of Mr. A. Hemmings, of London.

SAFETY SCAFFOLDS.—Various forms of working stages have been used in this country for some years, in partial substitution for the old-fashioned scaffolding once universal. An American inventor has now moved a step further in the direction of safety and economy, by devising a safety swinging scaffold for use in the facing of high buildings with stone, brick, or other material. The apparatus consists essentially of a platform in sections, suspended by wire cables from cantilever brackets, supported by the walls of the building. The platform is raised or lowered by suitable tackle, and may be held at any convenient height. Each section of the platform has a solid bottom, to prevent danger from falling material, and the sections are generally hung so as to form a continuous staging along one side, or completely around the building, so that work may be completely finished at one level before raising the scaffold. This type of scaffold would seldom be of use for the erection of buildings in our own country, but it might often be applied with advantage for the purposes of repair and decoration.

THE LOEBEN GAS LIGHT CONTROLLER.—The American Gas-light Improver Co. send us a description of their Loeben gas light controller, the object of which is to control the gas pressure at the burner, to mix equal quantities of air with the gas, thus ensuring perfect combustion, and to keep the light steady, irrespective of any changes in the pressure on the mains. They send a testimonial from Mr. M. G. Wilder, an American gas engineer, who states that it performs what it professes, and that there is no detail requiring expert management or attendance. The drawings sent do not explain the *modus operandi*, and there is apparently no installation of the light in London, so that we can only draw attention to it on the statement of the makers and of the gas engineer whose opinion accompanies it. The headquarters of the Gas Light Improver Co. are at Pennsylvania, U.S.A.

SOME DISCOVERIES AT QUEEN'S COLLEGE, OXFORD.—In the course of the works now in progress for new drainage and installation of electrical light have been found, in the crypt beneath the apse of the college chapel, the coffins of some of the earlier Provosts, and a leaden casket inscribed "Reliquiæ Fundatoris." The casket contains the remains of Robert de Egglesfield, rector of Brough, co. Westmorland, and chaplain and confessor to King Edward III.'s consort Philippa, in whose honour and memory he founded Queen's College in 1340. Robert died nine years afterwards, and was buried in the old chapel. The present chapel, having an eastern apse, was built in 1713-9, and forms together with the hall part of the façade of the south quadrangle or principal court, erected after designs by Nicholas Hawksmoor. The general design, bearing some resemblance to that of the Luxembourg at Paris by Salomon de Brosse, is, however, sometimes ascribed to Wren and sometimes to Dr. Lancaster, who was Provost at that time. In 1863 W. C. Bramwell restored the south sides of the hall and chapel in Bath stone. Some other relics of the former chapel have also been found, amongst them being a brass which bears the rebus of Robert Langton, who built the antechapel, in 1518; another brass, much worn, that is identified as the memorial of Nicholas Hyenson, a Fellow in 1477; a stone inscribed "Radulphus Hamisterley, Master of University College"; and the tomb-stones of Provosts Airay (1599-1616), Potter, and Langbaine. Two passages disclosed some feet below the surface in the two quadrangles, respectively, are, it is conjectured, the remains of conduits for carrying off surface-water from the buildings of the college.

WAR MEMORIAL AT LOW FELL.—The memorial erected at Low Fell to perpetuate the memory of five men who died in South Africa during the late war was unveiled recently by Col. J. B. Cookson, C.B., commanding the Northumberland Hussars Imperial Yeomanry. The stone was supplied by Messrs. Boiston, Heworth Burn Quarries, the work being carried out by Messrs. Morrison and McBean, monumental sculptors, Gateshead.

SCREEN, ST. ANDREWS, NEWCASTLE.—A new chancel screen has been erected in St. Andrew's Parish Church, Newcastle. The screen is 11 ft. 2 in. wide by 12 ft. 6 in. high, and is made of Austrian oak. It has been designed by Mr. W. Ellison Fenwicke, of the firm of Messrs. Dunn, Hanson, and Fenwicke, architects, and the work has been carried out by Mr. R. Hedley, both of Newcastle.

OPEN SPACE, ST. GILES, CRIPPLEGATE.—The Ward of Cripplegate has subscribed 1,000*l.*, and the Governors of the Cripplegate Foundation have contributed 500*l.*, towards the fund of 3,500*l.* which is being raised with the object of securing as an open space the recently cleared ground on the north side of the parish church. The design of the statue of Milton, a gift of Mr. Deputy Baddeley, is not yet decided upon; the figure, however, will be of bronze, supported upon a pedestal of Portland stone. The Foundation Governors have agreed to defray the charges of maintaining the open space, provided that it is vested in the official trustee of charity lands, and so held in trust for the Cripplegate Foundation. We learn that the execution of the statue will be entrusted to Mr. Horace Montford, who will model the head after the clay bust of Milton, at Christ's College, Cambridge, which was made in the poet's lifetime. The subject of two bas-reliefs, in bronze, on the pedestal are to be taken from "Comus" and "Paradise Lost," the latter representing the expulsion from the garden of Eden.

ROMFORD URBAN DISTRICT COUNCIL.—The Clerk to the Council writes:—"Referring to the advertisement which appeared in your issue of the 17th ult. for a surveyor for a temporary period, I now beg to inform you that Mr. H. A. Collingwood has been appointed by my Council."

KITCHENS OF RESTAURANTS.—The last Report of the Medical Officer of Health to the City of London states that the inspection of these premises is being continued. During the past five weeks 64 have been inspected for the first time, and re-inspections made in connexion with the work required to place those previously inspected in a sanitary condition. In a number of the 64 kitchens inspected, sanitary defects were discovered, including defective drains and soil-pipes, no separate water-closet accommodation for the different sexes employed, water-closets opening and ventilating directly into the kitchen, water-closets without light or ventilation and in some cases in a very dirty condition, kitchens badly lighted and ventilated, kitchen floors defective, cisterns dirty, sinks dirty and defective, ovens and cooking utensils dirty. Dr. Collingridge adds:—"As this inspection progresses, I am led more and more to estimate the great advantages accruing therefrom to the health of customers using these places, and still more to the workers who are compelled to spend their time underground in badly lighted, ventilated, and insanitary kitchens."

## CAPITAL AND LABOUR.

PENRHYN STRIKE.—The Penrhyn strike is now virtually over, and the men are seeking re-admission to the quarry. This means a complete victory for Lord Penrhyn, and the dispute would long ago have been settled but for the interference of outsiders. The loss to the men in wages is put at 100,000*l.*, but it is really over 300,000*l.*, as the quarry was entirely closed for some months, and less than half the full number of men employed the remainder of the time. The principal gainers by the strike were the foreign quarries, their slates having been imported at the rate of 100,000 tons per annum, but these will be gradually displaced by Bangor slates, owing to the superior quality of the latter.

## LEGAL.

### DOVER LIGHT AND AIR CASE.

THE hearing of the case of Thompson and Son, Ltd., *v.* Lloyd's Bank, Ltd., concluded before Mr. Justice Joyce in the Chancery Division on the 4th inst.—an action by the plaintiffs, the owners of the Garrick's Head, Market-square, Dover, against the defendants, the owners of Nos. 6 and 7, Market-square, for an injunction to restrain the defendants, their servants and agents, from erecting, or permitting to remain erected, any buildings on the site of their premises in such a manner as to interrupt the free access of light to plaintiff's windows as the same had hitherto been enjoyed, and for damages.

The plaintiffs' case was that the defendants' proposed building would materially interfere with the light coming to certain of their windows. The premises of plaintiffs and defendants adjoin, and part of the plaintiffs' consists of an open passage and a tap-room alongside it, which are on the ground floor, and of rooms over them. The rooms were used for the purpose of the plaintiffs' business. The windows of these rooms abut on to an open yard, which is part of the defendants' premises. The highest part of the old buildings of defendants did not exceed 34 ft. from the ground level. Plaintiffs and their predecessors in title had enjoyed without interruption, for more than twenty years prior to the commencement of the action, the free access of lateral light to the windows of these rooms over the defendants' buildings, and the plaintiffs further alleged that the windows were ancient lights. The plaintiffs further pleaded that defendants intended to pull down these buildings and erect new buildings on the site, carrying them to a height of 60 ft., and said that if this were done, the lights to the windows named would be materially obstructed, and it would be necessary to use artificial light.

Defendants in their defence said that no part of their proposed new buildings which could in any way affect the access of light to the plaintiffs' windows was to be as high, or nearly as high, as 60 ft. The proposed main back wall was to be of a height of 31 ft. 6 in. only above ground level, and was to be 3 ft. further south and away from the plaintiffs' windows than the existing back wall. Defendants also said that the ridge of the roof would rise to a height of 49 ft., but would be so sloped and set back from the main wall at the eaves, so as not to interfere with the access of light to plaintiffs' windows. The only part of the proposed buildings which was to approach a height of 60 ft. was a small turret, at the south-eastern corner, which could not have any effect on the access of light to the windows. Defendants further said that if there was any obstruction (which they did not admit), it would be lateral obstruction of an insignificant and immaterial character, and not such as to cause any appreciable damage to the plaintiffs.

Mr. Hughes, K.C., and Mr. McSwinney appeared for the plaintiffs, and Mr. Younger, K.C., and Mr. Sargent for the defendants.

In the result, his Lordship having heard the evidence and the addresses of counsel, in giving judgment, said it appeared that defendants were going to erect a larger building, and it was alleged that it would obstruct the lateral light coming to the plaintiffs' windows. The question was whether the defendants should be allowed to erect their buildings in accordance with the modified plans. The obstruction, if any, would be entirely lateral. Evidence had been given on both sides as to the probable result of the erection of these buildings, and he had been shown various plans and models. The defendants' witnesses admitted that the effect of the defendants' buildings would be to interfere

with the plaintiffs' lights to some extent, but said it would not cause any appreciable damage to the plaintiffs, and that was the question his lordship had to decide. In this case it appeared to him that all the plaintiffs' windows got their light from a kind of well. He was satisfied that this sort of well would be very much darker after the defendants' buildings were erected than it was now, and there would be obstruction to the direct sunlight to the plaintiffs' windows during a part of the day. On the facts of the case, he was of opinion that the erection of the defendants' buildings would be to darken during part of the day, and injure and obstruct some of the ancient lights of the plaintiffs' premises as the same were now enjoyed, and he was of opinion that the interference would not be trivial, but would be such as would justify the Court in granting an injunction in the Yates and Jack form, the defendants to pay the costs of the action. .....

Order accordingly.

## ACTION AGAINST AN ENGINEER AND ARCHITECT.

THE case of Hodgson *v.* Waugh came before the Court of Appeal, composed of the Master of the Rolls and Lords Justices Mathew and Cozens-Hardy, on the 9th inst., on the appeal of the plaintiff against an order of Mr. Justice Ridley in chambers, reversing an order of Master Chitty, and directing that the case should be tried at the Leeds Assizes before a jury.

Mr. Lush, K.C., for the appellant, said the action was brought against Mr. John Waugh, a West Riding civil engineer and architect. Two or three years ago, when about to go to Japan, plaintiff instructed the defendant to alter a house he had bought in Hertfordshire. Plaintiff alleged that the defendant had not followed out his instructions with regard to the alterations which he made in the house, and that as a consequence the plaintiff had been put to expense amounting to about 9,000*l*. This sum he now claimed from the defendant by way of damages. The defendant counterclaimed for architect's fees amounting to 1,200*l*., and commission. The learned counsel said that the Master had referred the case to Mr. Edward Pollock, the Official Referee, and he submitted that that order ought to be reinstated. He pointed out that there were 18 witnesses for the plaintiff, only one of whom lived in Yorkshire, and he contended that it would be a great injustice to drag the plaintiff up to Yorkshire to have the case tried there, when it did not concern the district. Defendant pleaded that the alterations he had made were reasonable and necessary in order to make a good job of the buildings. The plaintiff was going to call expert witnesses to show that they were not reasonable alterations in accordance with his instructions.

Mr. Tindal Atkinson, K.C., for the defendant, pointed out that in addition to the alleged departure from the instructions by the defendant, there was a distinct charge against him of gross negligence and an attack upon his honour. As the defendant was well known in the West Riding district, it was most important that he should have his character cleared in that locality. If that issue could be tried in Yorkshire, then any points with regard to departure from the instructions as to the alterations could be referred.

Mr. Compston, who appeared with Mr. Lush for the plaintiff, said that all imputations of fraud against the defendant had been withdrawn.

Mr. Atkinson said that the withdrawal was of no value so long as the statement of claim was so framed as to imply that there had been distinct misrepresentation and negligence.

After further arguments, it was arranged that counsel should discuss together as to whether it was not possible to isolate the question of figures from that of negligence, the question of negligence being one for a jury alone.

On the following day, the 10th inst., Mr. Lush stated that it had been agreed that the action should be set down in Middlesex to be tried before a special jury, application to be made to the senior Judge of the Division for him to decide how the figures arising in the case should be dealt with.

The Master of the Rolls assented to this, and directed that the costs of the appeal should be made costs in the case.

## PATENTS OF THE WEEK.

### APPLICATIONS PUBLISHED.*

27,345 of 1902.—C. GAUTSCH: *Process of Rendering Wood Uninflammable.*

A process of rendering wood uninflammable by means of ammonium sulphate and boracic acid, whereof the main feature is that the wood is treated at a temperature below 100 degrees Centigrade, but preferably not exceeding 60 degrees, with a solution composed of ammonium sulphate, ammonium borate, and caustic ammonia.

27,365 of 1902.—J. T. WOODCOCK: *Heating Apparatus for Greenhouses, Rooms, and the like.*

A heating apparatus, consisting of a central column surrounded by a boiler adapted to be filled with blocks and balls of a non-combustible nature, inlet holes for fuel and air at the base of said column, a baffle at the top of said column, and a funnel-shaped cover above said baffle.

9,334 of 1903.—V. W. LLOYD: *Fire Escape Apparatus.*

A fire escape apparatus consisting of a collapsible basket suspended by wire ropes from two pulley blocks carried by brackets fixed to the upper coping on the front of a building, one at each end of the latter, and brackets fixed to the lower part of the building and formed with cleats, around which the said ropes are coiled to permit of the suspension and lowering of the basket from any of the windows.

27,518 of 1902.—J. ANDERSON and THE SOUTHBROOK FIRE CLAY CO., LTD.: *Manufacture of Glazed or Enamelled Bricks.*

The manufacture of glazed or enamelled bricks with recesses or depressions along the upper and lower beds at the side or end removed from that which receives the marginal glazing.

27,548 of 1902.—W. BRENTON: *Sliding Bolts.*

A sliding bolt, the pin of which slides through two bridge pieces each having a single abutment, which is provided with a central handle having claws or hooks adapted to engage with one or other of the said abutments, the said handle serving to limit the movement of the pin in either direction and being secured by a lock passed through the eye in one or other of the abutments.

27,572 of 1902.—A. ROBERTSON: *Fanlight.*

Means for tightly closing a pivoted fanlight, comprising differential or other screws arranged to actuate a shaft having on it teeth or projections engaging corresponding teeth or notches on the window slides, and adapted to move these endwise to apply wedge action for effecting a water-tight closure after the window is closed.

19,784 of 1903.—R. KROLL: *Preservation of Timber.*

This consists of a post or beam provided with a longitudinal bore, lateral openings in communication at one end with said bore and extending through the sides of the timber, and a passage about parallel with the longitudinal bore and in communication at one end with one of the aforesaid openings and having its opposite end in communication with the other end of said bore.

13,715 of 1903.—W. EDWARDS: *Ventilators.*

A ventilator consisting of a rectangular box fitted to the outer wall of a building and provided with a vertically hanging mica or light metal valve and a horizontal plate for directing the air inside the building through a perforated plate to the outside of the building, sudden draughts or inrush of air being prevented by the closing of the valve against an inclined seating surrounding an opening at the inner end of the box, and the outer air being directed on to said valve by inclined sides or plates fixed inside the box.

26,085 of 1902.—T. ADCOCK: *Apparatus for Drying and Burning Bricks and the like.*

An apparatus for drying and burning bricks, consisting in the combination with a kiln and a drying shed of a conduit to conduct the waste hot gases of combustion from the main flue or flues of the kiln to suitably disposed flues in the drying shed.

24,492 of 1902.—G. C. DOUGLAS (W. F. Ford): *Drilling and Reamering Machines.*

In drilling and reamering machines, the mode of rotating the spindle by means of spur wheels and pinions and worm and worm wheels, so that, at will, the rate of rotation may be changed.

25,721 of 1902.—S. G. SEABURY: *Tube Compressors or Pinch-cocks.*

A tube compressor comprising a tube encircling member, having a cylindrical bore and a tube compression member formed of a section of a sphere, means for adjusting said compression member, and a rocking connexion between the latter and its adjusting device.

25,423 of 1902.—S. F. RESTALL: *Brushes and like Implements for Cleaning, Painting, and otherwise Treating Surfaces.*

A brush or the like for cleaning, painting, and otherwise treating surfaces, in which the brush is spring connected with the handle in such a manner that the brush is deflected when it comes into contact with any irregularities of surface.

27,128 of 1902.—W. GROOM: *Suspended Staging applicable for Use in Quarrying Chalk, Painting, and other purposes.*

Apparatus for use in quarrying chalk and for other purposes, comprising a pair of tightly-strained guide chains fastened at both ends, a bucket or cradle with guide wheels running on the said chains, and elevating ropes and pulleys

27,271 of 1902.—J. RUSSEL and the firm of ROSSER AND RUSSEL, LTD.: *Automatic Regulator for Warming Apparatus.*

A thermostatic device for automatically regulating the steam supply to the hot-water cylinder of a warming apparatus, consisting essentially in the combination with the hot-water cylinder of a column of mercury enclosed in a tube, a piston resting upon said column of mercury, and a balanced piston valve for controlling the steam supply to the hot-water cylinder and connected to the piston.

18,413 of 1903.—J. MORRIS: *Portable Roofs for Sheds, Pavilions, Freight Cars, Stacks of Grain, and the like.*

This invention relates to portable roofs, especially of a class adapted for protecting stacks of grain and for outbuildings, awnings, and the like. It consists in providing panels of corrugated galvanised iron, some of which are smaller than the others, the smaller panels having flanges on their edges adapted to interlock with similar flanges on the larger. Means are provided for bolting the panels together and for protecting the bolts from the weather. To prevent leakage at the junction of the panels at the top of the gable, the larger panels are provided with extensions adapted to be turned down upon the surface of the oppositely inclined panel. When the panels are formed into a circular roof, the top is protected by a cone-shaped hood.

23,318 of 1902.—T. HONEYBOURNE: *Ratchet Device or Stay for Looking-glasses, Sashes, and the like.*

This invention relates to a device to be fixed to a looking-glass, window-sash, or the like, to enable the same to be fixed at any angle. It consists in fixing a ratchet to the side of the glass or sash which engages with a pin in the frame.

19,772 of 1903.—H. OLSEN: *Gates.*

This invention has for its objects to produce a gate of simple construction, the forward end of which will be prevented from sagging, and which may be adjusted to vary its height from the ground. It consists of a suitable length of pipe bent to, substantially, "S" or "Z" form, or so disposed that a portion of the pipe corresponding to one end of the latter will form the pivoting bar and the other end will form the latch bar, these bars being connected by an integral diagonal brace. The pivoting bar extends loosely through the tubular heads of tee pieces disposed in vertical alignment on the gate-post, and rests on its lower end on a bearing which is embedded in the ground, and which sustains the wear incident on opening and shutting. Boards or wires may be fixed horizontally across the gate.

26,078 of 1902.—H. K. G. BAMBER: *Manufacture of Portland Cement and an Apparatus therefor.*

The object of the invention is to effect the more speedy evaporation of the water in the slurry and to heat the same and also to cleanse the gases escaping from the rotary kiln, thereby economising fuel. In the rotary kiln several wings are so fixed longitudinally in the interior of the upper or drying end of the kiln by which the slurry is carried upwards, whence it falls from the wings to the bottom of the kiln, the slurry falling from the wings directly the wing rises sufficiently high as the kiln revolves. According to this invention, the pairs of diametrically opposite wings are connected with a series of plates having spaces between them, the plates connecting one pair of wings alternating with those of the adjacent pairs. These plates may be at right angles to the axis of the kiln, but preferably there are arranged diagonal adjacent sets sloping in opposite directions. In order further to ensure the material being lifted to the upper part of the kiln, scoops are fixed on the wings at the ends of the cross-plates. These scoops consist of boxes open at the top, and preferably having their inner ends perforated. Baffle plates may also be fixed to the cross-plates to temporarily catch and retain the material descending along them.

24,201 of 1902.—F. A. WIMBLE: *Window-cleaning Devices.*

This invention has reference to window-cleaning devices, and has for its chief object to enable the glass of a window of any ordinary construction to be conveniently cleaned on its outer side. According to the invention, a transverse cleaner is provided, which may consist of a horizontal roller or the like, having a cleansing surface, and adapted to be moved up and down in contact with the glass. The said roller or similar device is connected by means of cords or other

* All these Applications are in the stage in which opposition to the grant of Patents upon them can be made.

flexible attachments to the upper and lower portions of the window-frame in such manner that by pulling upon said cords or the like in either direction, the roller or similar device is caused to travel vertically over the surface of the glass. Means are also provided whereby the position of the cleaning device relatively to the window-frame may be adjusted horizontally, in order that every part of the glass may be cleaned.

19,831 of 1903.—J. GREEN, T. GREEN, and J. S. GREEN: *Roofing Tiles.*

This invention relates to roofing tiles, and consists in forming a pan tile with two corrugations or rolls. This enables the tile to rest more firmly on the lath, and also enables a nail hole to be made in the tile out of the water channel, to avoid leakage.

27,538 of 1902.—B. J. B. MILLS (E. Brousse): *Slabs or Blocks for Paving, Flagging, Tiling, and the like.*

Slabs or blocks for paving, flagging, and the like, consisting in the combination of a mass of plastic material with metallic frames, supports, or strengtheners embedded therein, such frames, supports, or strengtheners having solid or hollow bars of any desired form rising through the plastic material flush with the surface of the slab or block, and connected together at their base.

19,630 of 1903.—A. ETTER: *Valves or Gates for Use in Connexion with Sluices and the like.*

An automatic sluice valve in which a floating flap, whose axis of rotation is located in the plane of the highest (desired) water level, is arranged in front of a weighted flap moving about a horizontally-mounted axis, which flap in the perpendicular position protects the weighted valve in its closed position at low water, but is lifted up when the water level reaches it, and thereby exposes the surface of the weighted valve so that it is turned over by the water.

27,501 of 1902.—S. RYAN: *Feed Mechanism for Use in the Manufacture of Asphalt or the like.*

This invention relates to a feed mechanism for use in the manufacture of asphalt, and is specially applicable for use in conjunction with the invention set forth in Patent No. 5,835 of 1902. Its object is to provide means for automatically regulating the amount of tar entering into the composition in proportion to the weight of the stone. The supply is governed by a pair of sluice valves or dampers applied to the feed pipe one above the other, and one being shut when the other is open, after the manner of the well-known shot flask. The stone to be mixed with the tar is dropped intermittently into the mixing chamber by means of a tumbler or double hopper, which is pivotally supported above said chamber in such manner that when one side has received sufficient stone it turns over and discharges it, and at the same time the other side is placed in readiness to receive a charge, and so on. The hopper is connected to the tar escapement mechanism by levers or other suitable means, and it will thus be seen that when one side of the hopper is down the tar is filling the measuring space in the feed pipe, and when the other side is down the charge of tar is allowed to escape and mix with the stone.

## MEETINGS.

FRIDAY, NOVEMBER 13.

*Sanitary Institute (Lectures for Sanitary Officers).*—7 p.m.

MONDAY, NOVEMBER 16.

*Royal Institute of British Architects.*—Monsieur J. T. Homolle, Director of the French School at Athens, on "Le Trésor de Cnide et les Monuments de l'Art Ionien à Delphes." 8 p.m. (The paper will be illustrated by a collection of drawings, known as the "Deadna Tournaire," lent for the occasion by the French Government.)

*Sanitary Institute (Lectures for Sanitary Officers).*—7 pm.

*Liverpool Architectural Society.*—Mr. H. Chatfeild Clarke on "The Bill for Altering the Law of Ancient Lights." 6 p.m.

TUESDAY, NOVEMBER 17.

*Institute of Sanitary Engineers (Lectures in Practical Sanitary Science).*—Mr. W. J. Dibdin, F.I.C., on "Sewage Disposal." 7 p.m.

*Institution of Civil Engineers.*—Paper to be further discussed: "Tensile Tests of Mild Steel, and the Relation of Elongation to the Size of the Test-Bar." By Professor W. C. Unwin, B.Sc., F.R.S. 8 p.m.

WEDNESDAY, NOVEMBER 18.

*Quantity Surveyors' Association.*—General meeting, Holborn Restaurant. 4 p.m.

*Architectural Association (Discussion Section).*—Mr. M. G. Pechell on "Practical Travelling on the Continent." 7.30 p.m.

*Society of Arts.*—Opening meeting of the 150th Session. Address by Sir W. Abney, K.C.B., Chairman of Council. 8 p.m.

*Sanitary Institute (Demonstrations for Sanitary Officers).*—Inspection at Harrison & Barber's knacker yard, Winthrop-street, Whitechapel, E. 3 p.m.

*Builders' Foremen and Clerks of Works' Institution.*—Ordinary meeting of the members. 8 p.m.

*St. Paul's Ecclesiological Society.*—Dr. J. Wickham Legg, F.S.A., on "The Bledlow Inventory of 1783: Its Genuineness and Curiosities." 8 p.m.

THURSDAY, NOVEMBER 19.

*Sanitary Institute (Lectures for Sanitary Officers).*—7 p.m.

*Leeds and Yorkshire Architectural Society.*—Address by President, Mr. Butler Wilson, and distribution of prizes. 7.30 p.m.

FRIDAY, NOVEMBER 20.

*Architectural Association.*—Mr. H. M. Cautley on "Farm Buildings." 7.30 p.m.

*Sanitary Institute (Lectures for Sanitary Officers).*—7 p.m.

*Glasgow Architectural Craftsmen's Society.*—Mr. J. C. Walker on "Planning and Construction of Burgh Buildings." 8 p.m.

*Institution of Mechanical Engineers.*—The following Papers will be read and discussed so far as time permits:—(1) "Roofing Existing Shops while Work is Proceeding," by Mr. R. H. Fowler: (2) "Experiments on the Efficiency of Centrifugal Pumps," by Mr. Thomas E. Stanton, D.Sc. 8 p.m.

SATURDAY, NOVEMBER 21.

*Junior Institution of Engineers.*—Visit to Orchard Dock, Blackwall, to witness a demonstration of fire-extinguishing, &c., by invitation of the Clayton Company. 2.30 p.m.

## SOME RECENT SALES OF PROPERTY:

### ESTATE EXCHANGE REPORT.

October 30.—By HAMPTON & SONS (at Exeter).

Bonford, Devon.—The Bonford Estate, 605 a. 3 r. 9 p., f. — £4,700
Bonford Wood and allotments, 49 a. 3 r. 14 p., f. — 350

By SURRIDGE & SON (at Chelmsford).

Totham, Essex.—Little Totham Hall Farm, 205 a. 3 r. 27 p., f., *y.r.* 175*l.* — 2,250

October 31.—By FINCHETT SONS & ADAMS (at Canterbury).

Grove Ferry, Kent.—The Grove Ferry Hotel, 20 a., f., with goodwill — 4,200

By THURGARBROW & Co. (at Keswick).

Barrowdale, Westmorland.—Greenbank Estate, 77 a. 2 r. 28 p., f. — 3,070

November 2.—By MAY & ROWDEN.

Oxford-st.—Nos. 399, 401, 403 and 405: also 1 and 2, Thomas-st. (S.), u.t. 56½ yrs., g.r. 250*l.*, *y.r.* 1,250*l.* — 20,500

By FIELD & SONS.

Bromley, Kent.—Freeland's-rd., the Freeland's Tavern, f., *y.r.* 65*l.* — 1,850

Park-rd., the Crown and Anchor, p.-h., *l.g.r.* 50*l.*, reversion in 61¼ yrs. — 1,320

21, Park-rd. (S.), with blacksmith shop adjoining, f., *y.r.* 65*l.* — 1,175

Clapton.—25 to 33 (odd), Cricketfield-rd., f., *y.r.* 192*l.* — 2,000

Bayswater.—1, Alexander Mews, u.t. 46½ yrs., *g.r.* 4*l.*, *v.r.* 22*l.* — 230

By FISHER, STANHOPE & DRAKE.

Stoke Newington.—50, Oakdalston-rd., u.t. 75 yrs., g.r. 8*l.* 10*s.*, *e.r.* 56*l.* — 330

By LONG & SONS.

Hammersmith.—63 and 65, King-st. (S.), u.t. 48 yrs., *g.r.* 22*l.*, *y.r.* 220*l.* — 5,850

20 and 22, Black's-rd., with slaughter-house, sheep-pen, &c., u.t. 8 yrs., *g.r.* 8*l.* 15*s.* — 250

November 3.—By DAVID BURNETT & Co.

Chiswick.—Bedford-rd., a plot of freehold building land, *y.r.* 28*l.* — 1,000

4, Woodstock-rd., u.t. 72 yrs., *g.r.* 10*l.*, *y.r.* 45*l.* — 450

By C. W. DAVIES & SON.

Islington.—Cloudesley-rd., *l.g.r.* 4*l.*, reversion in 19 yrs. — 225

Tottenham.—1 to 6, Chalgrove-rd., u.t. 75 yrs., *g.r.* 20*l.*, *w.r.* 141*l.* 14*s.* — 700

Manor Park.—112 and 114, Herbert-rd., f., *w.r.* 14*l.* 12*s.* — 535

Clapton.—180, Glyn-rd., u.t. 73¼ yrs., *g.r.* 8*l.*, *e.r.* 60*l.* — 450

By LINNETT & LANE.

Harlesden.—101, Drayton-rd., u.t. 97 yrs., *g.r.* 5*l.* 10*s.*, *y.r.* 28*l.* — 245

By MORETON RICHES.

Chelsea.—51 and 53, Redburn-st., u.t. 49 yrs., *g.r.* 16*l.*, *y.r.* 110*l.* — 1,200

Wandsworth.—70, Wakehurst-rd., u.t. 81 yrs., *g.r.* 6*l.* 10*s.*, *w.r.* 45*l.* 10*s.* — 315

Battersea.—64, Henley-st., u.t. 63½ yrs., *g.r.* 6*l.*, *w.r.* 23*l.* 16*s.* — 175

By WM. WESTON.

Shepherd's Bush.—37, Stowe-rd., u.t. 73 yrs., *g.r.* 7*l.*, *w.r.* 46*l.* 6*s.* — 310

28, Stowe-rd., u.t. 63 yrs., *g.r.* 10*l.*, *o.r.* 50*l.* — 270

Acton.—133, Park-rd. North, u.t. 75½ yrs., *g.r.* 8*l.*, *w.r.* 35*l.* 2*s.* — 200

Dulwich.—2, Allison-gdns., u.t. 70½ yrs., *g.r.* 10*l.* 10*s.*, *e.r.* 60*l.* — 480

By WILLIS, CROUCH & LEE.

Houndsditch.—18, 19, 20, 21 and 22, Carter-st. (S.), u.t. 36 yrs., *g.r.* 57*l.* 12*s.*, *y.r.* 287*l.* 18*s.* — 1,080

13 and 14, Exchange-pl. (S.), u.t. 33½ yrs., *g.r.* 12*l.* 8*s.*, *y.r.* 60*l.* — 600

By WOODS'.

Hackney.—21 and 22, Margaret-st. (S.), u.t. 37 yrs., *g.r.* 2*l.*, *w.r.* 53*l.* 6*s.* — 325

By ORGILL, MARKS & LAWRENCE (at Masons' Hall Tavern).

Lambeth.—Roupell-st., the King's Arms, p.-h., u.t. 28½ yrs., *v.r.* 90*l.*, with goodwill — 10,500

Camden Town.—Stanhope-st., the Hope p.-h., a profit rental of 51*l.* 18*s.* for 35 years — 800

November 4.—DUNCAN & KIMPTON.

Bayswater.—Leinster-sq., *l.g.r.* 40*l.*, u.t. 49 yrs., *g.r.* 2*l.* — 725

Brompton.—Ifield-rd., *l.g.r.* 25*l.*, u.t. 59 yrs., *g.r.* 6*l.* — 420

Hampstead.—Adelaide-rd., *l.g.r.* 20*l.*, u.t. 45 yrs., *g.r.* 5*l.* — 325

Adelaide-rd., *l.g.r.* 29*l.* 8*s.*, u.t. 49 yrs., *g.r.* 7*l.* — 415

Holloway.—9, 17, and 19, Beversbrook-rd., u.t. 66½ yrs., *g.r.* 18*l.*, *y.r.* 92*l.* — 1,080

By FOSTER & CRANFIELD.

Brondesbury.—Shoot-up-Hill, Ravens, u.t. 76 yrs., *g.r.* 3*l.* 3*s.*, *y.r.* 115*l.* (including mortgage) — 1,100

By W. G. HARRIS & Co.

Hendon.—1, The Burroughs (S.), f., *y.r.* 40*l.* — 855

Prince of Wales-rd., *l.g.r.* 19*l.*, reversion in 61 yrs. — 495

1 to 5, Oakleigh-villas, f., *w.r.* 132*l.* 16*s.* — £1,805

6, Oakleigh-villas (with laundry, stables, &c.), f., *y.r.* 75*l.* — 900

By HY. HOLMES & Co.

Regent's Park.—31, Chester-ter. (with stabling), u.t. 12 yrs., *g.r.* 52*l.* 10*s.*, *y.r.* 55*l.* — 1,050

Oxford-st.—Wells-st., Welbeck House (flats), u.t. 30½ yrs., *g.r.* 24*l.*, *y.r.* 234*l.* 6*s.* — 1,450

Ealing.—264, Uxbridge-rd., u.t. 89 yrs., *g.r.* 8*l.*, *y.r.* 80*l.* — 1,050

256, Uxbridge-rd., u.t. 72 yrs., *g.r.* 8*l.*, *y.r.* 36*l.* — 640

Holloway.—42, Crayford-rd., u.t. 62 yrs., *g.r.* 7*l.*, *e.r.* 48*l.* — 450

Tottenham.—3, Daleview-rd., u.t. 56 yrs., *g.r.* 6*l.*, *e.r.* 34*l.* — 280

Twickenham.—2, Twickenham-pl. (S.), *c.*, *y.r.* 60*l.* — 620

By N. EASTON & SON (at Hull).

Sutton, Yorks.—Noddle Hill Farm, 157 a., f. — 6,000

Enclosure of grass land, 3 a. 2 r. 0 p., f. — 400

November 5.—By B. R. BOSTOCK.

Forest Gate.—75 and 77, Clova-rd., f., *y.r.* 64*l.* — 980

By COLES & Co.

Pirbright, Surrey.—Main-rd., a plot of land, 1 a. 0 r. 7 p., f. — 120

Woking, Surrey.—Pirbright-rd., a plot of land, 2 a. 2 r. 26 p., f. — 280

By J. G. DEAN & Co.

Wimbledon.—204, 206, 208, 216, 218, and 220, Haydon's-rd., u.t. 75 yrs., *g.r.* 30*l.*, *y.r.* 146*l.* — 1,015

Tooting.—42, Vant-rd., u.t. 74 yrs., *g.r.* 6*l.*, *e.r.* 30*l.* — 290

By FRANCIS DOD & Co.

Stoke Newington.—47, Lordship-rd., u.t. 60 yrs., *g.r.* 2*l.*, *e.r.* 36*l.* — 575

By EDWIN EVANS (at Battersea).

Battersea.—86 to 100 (even), Wickersley-rd., u.t. 65 yrs., *g.r.* 46*l.*, *w.r.* 297*l.* 14*s.* — 1,855

103, Lavender-rd., u.t. 42½ yrs., *g.r.* 5*l.*, *w.r.* 21*l.* 4*s.* — 165

80, Lavender-sweep, u.t. 76½ yrs., *g.r.* 7*l.* 10*s.*, *e.r.* 48*l.* — 430

14, Currie-rd., f., *w.r.* 33*l.* 16*s.* — 350

60 and 62, Mayoralie-rd., u.t. 75 yrs., *g.r.* 10*l.*, *w.r.* 57*l.* 4*s.* — 440

31, Millgrove-st., u.t. 70 yrs., *g.r.* 4*l.* 10*s.*, *w.r.* 39*l.* — 245

12, Patience-rd., u.t. 74 yrs., *g.r.* 6*l.*, *w.r.* 39*l.* — 285

Wandsworth.—14, Milford-st., u.t. 27 yrs., *g.r.* 6*l.* 6*s.*, *w.r.* 31*l.* 4*s.* — 150

85, East Hill (S.), u.t. 70 yrs., *g.r.* 12*l.*, *y.r.* 80*l.* — 315

November 6.—By WM. CLARKSON.

East Ham.—1, 3, and 5, Arragon-rd., f., *w.r.* 93*l.* 12*s.* — 850

Poplar.—81, 83, and 87, Abbott-rd., u.t. 70 yrs., *g.r.* 15*l.*, *w.r.* 117*l.* — 895

28, Bath-st. (S.), f., *y.r.* 36*l.* 8*s.* — 415

***Contractions used in these lists.***—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; p. for possession; e.r. for estimated rental; w.r. for weekly rental; q.r. for quarterly rental; *y.r.* for yearly rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; la. for lane; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; av. for avenue; gdns. for gardens; yd. for yard; gr. for grove; b.h. for beer-house; p.h. for public-house; o. for offices; s. for shops.

## PRICES CURRENT OF MATERIALS.

*** Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

### BRICKS, &c.

| | £ s. d. | | |
|---|---|---|---|
| Hard Stocks | 1 16 6 | per 1,000 alongside, in river | |
| Rough Stocks and Grizzles | 1 13 0 | " | " |
| Facing Stocks | 2 12 0 | " | " |
| Shippers | 2 5 0 | " | " |
| Flettons | 1 11 0 | " | at railway depôt |
| Red wire Cuts | 1 13 0 | " | " |
| Best Fareham Red | 3 12 0 | " | " |
| Best Red Pressed Ruabon Facing | 5 0 0 | " | " |
| Best Blue Pressed Staffordshire | 4 5 0 | " | " |
| Do. Bullnose | 4 11 0 | " | " |
| Best Stourbridge Fire Bricks | 4 8 0 | " | " |
| GLAZED BRICKS. | | | |
| Best White and Ivory Glazed Stretchers | 13 6 0 | " | " |
| Headers | 12 0 0 | " | " |
| Quoins, Bullnose, and Flats | 17 0 0 | " | " |
| Double Stretchers | 19 0 0 | " | " |
| Double Headers | 16 0 0 | " | " |
| One Side and two Ends | 19 0 0 | " | " |
| Two Sides and one End | 20 0 0 | " | " |
| Splays, Chamfered, Squints | 20 0 0 | " | " |
| Best Dipped Salt Glazed Stretchers and Headers | 12 6 0 | " | " |
| Quoins, Bullnose, and Flats | 14 0 0 | " | " |
| Double Stretchers | 15 0 0 | " | " |
| Double Headers | 14 0 0 | " | " |
| One Side and two Ends | 15 0 0 | " | " |
| Two Sides and one End | 15 0 0 | " | " |
| Splays, Chamfered, Squints | 14 0 0 | " | " |
| Second Quality White and Dipped Salt Glazed | 2 0 0 | " | less than best. |

| | s. d. | |
|---|---|---|
| Thames and Pit Sand | 6 9 | per yard, delivered. |
| Thames Ballast | 6 0 | " " |
| Best Portland Cement | 20 0 | per ton, delivered. |
| Best Ground Blue Lias Lime | 20 6 | " " |

NOTE.—The cement or lime is exclusive of the ordinary charge for sacks.

| | |
|---|---|
| Grey Stone Lime | 12s. 0d. per yard, delivered. |
| Stourbridge Fire Clay in sacks | 27s. 0d. per ton at rly. dpt |

## PRICES CURRENT (*continued*).

### STONE.

| | | |
|---|---|---|
| BATH STONE—delivered on road waggons, Paddington depôt | 1 | 6½ per ft. cube. |
| Do. do. delivered on road waggons, Nine Elms Depôt | 1 | 8½ " " |
| PORTLAND STONE (20 ft. average)— | | |
| Brown Whitbed, delivered on road waggons, Paddington depôt, Nine Elms depôt, or Pimlico Wharf | 2 | 1 " " |
| White Basebed, delivered on road waggons, Paddington depôt, Nine Elms depôt, or Pimlico Wharf | 2 | 2½ " " |

| | s. | d. | |
|---|---|---|---|
| Ancaster in blocks | 1 | 11 | per ft. cube, deld. rly. depôt |
| Beer in blocks | 1 | 6 | " " |
| Greenshill " | 1 | 10 | " " |
| Darley Dale in blocks | 2 | 4 | " " |
| Red Corsehill " | 2 | 5 | " " |
| Closeburn Red Freestone | 2 | 0 | " " |
| Red Mansfield " | 2 | 4 | " " |

YORK STONE—*Robin Hood Quality.*

| | | | |
|---|---|---|---|
| Scappled random blocks 6 in. sawn two sides landings to sizes (under 40 ft. super.) | 2 | 3 | per foot super. " |
| 6 in. Rubbed two sides Ditto, Ditto | 2 | 6 | " " |
| 3 in. Sawn two sides slabs (random sizes) | 0 | 11½ | " " |
| 2 in. to 2½ in. Sawn one side slabs (random sizes) | 0 | 7½ | " " |
| 1½ in. to 2 in. ditto, ditto | 0 | 6 | " " |
| Scappled random blocks 6 in. sawn two sides, landings to sizes (under 40 ft. sup.) | 3 | 0 | per ft. cube " |
| | 2 | 8 | per ft. super. " |
| 6 in Rubbed two sides Ditto | — | | " " |
| 3 in. sawn two sides slabs (random sizes) | 1 | 2 | " " |
| 2 in. self-faced random flags | 0 | 5 | " " |
| Hopton Wood (Hard Bed) in blocks | 2 | 3 | per ft. cube. |
| " " " 6 in. sawn both sides landings | 2 | 7 | per ft. super. deld. rly. depôt. |
| " " " 3 in. do. | 1 | 2½ | " " |

### SLATES.

| in. in. | £ | s. | d. | |
|---|---|---|---|---|
| 20×10 best blue Bangor | 13 | 2 | 6 | per 1000 of 1200 at rly.dep. |
| 20×12 " " | 13 | 17 | 6 | " " |
| 20×10 best seconds " | 12 | 15 | 0 | " " |
| 20×12 " " " | 13 | 10 | 0 | " " |
| 16×8 best " | 7 | 0 | 0 | " " |
| 20×10 best blue Portmadoc | 12 | 12 | 6 | " " |
| 16×8 best blue Portmadoc | 6 | 12 | 6 | " " |
| 20×10 best Eureka unfading green | 15 | 2 | 6 | " " |
| 20×12 best Eureka unfading green | 17 | 2 | 6 | " " |
| 18×10 " " | 12 | 10 | 0 | " " |
| 16×8 " " | 10 | 5 | 0 | " " |
| 20×10 permanent green | 11 | 10 | 0 | " " |
| 18×10 " " | 9 | 10 | 0 | " " |
| 16×8 " " | 6 | 10 | 0 | " " |

### TILES.

| | s. | d. | |
|---|---|---|---|
| Best plain red roofing tiles | 42 | 0 | per 1,000 at rly. depot. |
| Hip and valley tiles | 3 | 7 | per doz. " " |
| Best Broseley tiles | 50 | 0 | per 1,000 " " |
| Do. Ornamental Tiles | 52 | 6 | " " " |
| Hip and Valley tiles | 4 | 0 | per doz. " " |
| Best Ruabon Red, brown or brindled Do. (Edwards) | 57 | 6 | per 1,000 " " |
| Do. Ornamental Do. | 60 | 0 | " " " |
| Hip tiles | 4 | 0 | per doz. " " |
| Valley tiles | 3 | 0 | " " " |
| Best Red or Mottled Staffordshire Do. (Peakes) | 51 | 9 | per 1,000 " " |
| Do. Ornamental Do. | 54 | 6 | " " " |
| Hip tiles | 4 | 1 | per doz. " " |
| Valley tiles | 3 | 8 | " " " |
| Best "Rosemary" brand plain tiles | 48 | 0 | per 1,000 " " |
| Do. Ornamental Do | 50 | 0 | " " " |
| Hip tiles | 4 | 0 | per doz. " " |
| Valley tiles | 3 | 8 | " " " |

### WOOD.

| | At per standard. £ | s. | d. | £ | s. | d. |
|---|---|---|---|---|---|---|
| Deals: best 3 in. by 11 in. and 4 in. by 9 in. and 11 in. | 15 | 10 | 0 | 16 | 10 | 0 |
| Deals: best 3 by 9 | 14 | 10 | 0 | 15 | 10 | 0 |
| Battens: best 2½ in by 7 in. and 8 in., and 3 in. by 7 in. and 8 in. | 11 | 10 | 0 | 12 | 10 | 0 |
| Battens: best 2½ by 6 and 3 by 6 | 0 | 10 | 0 | less than 7 in. and 8 in. | | |
| Deals: seconds | 1 | 0 | 0 | less than best | | |
| Battens: seconds | 0 | 10 | 0 | " " " | | |
| 2 in. by 4 in. and 2 in. by 6 in. | 9 | 0 | 0 | 9 | 10 | 0 |
| 2 in. by 4½ in. and 2 in. by 5 in. | 8 | 10 | 0 | 9 | 10 | 0 |
| Foreign Sawn Boards— 1 in. and 1¼ in. by 7 in. | 0 | 10 | 0 | more than battens. | | |
| ¾ in. | 1 | 0 | 0 | " | | |
| Fir timber: Best middling Danzig or Memel (average specification) | At per load of 50 ft. 4 | 10 | 0 | 5 | 0 | 0 |
| Seconds | 4 | 5 | 0 | 4 | 10 | 0 |
| Small timber (8 in. to 10 in.) | 3 | 12 | 6 | 3 | 15 | 0 |
| Small timber (6 in. to 8 in.) | 3 | 0 | 0 | 3 | 10 | 0 |
| Swedish balks | 2 | 15 | 0 | 3 | 0 | 0 |
| Pitch-pine timber (30 ft. average) | 3 | 5 | 0 | 3 | 15 | 0 |

### JOINERS' WOOD.

| | At per standard. £ | s. | d. | £ | s. | d. |
|---|---|---|---|---|---|---|
| White Sea: First yellow deals, 3 in. by 11 in. | 23 | 0 | 0 | 24 | 0 | 0 |
| 3 in. by 9 in. | 21 | 0 | 0 | 22 | 10 | 0 |
| Battens, 2½ in. and 3 in. by 7 in. | 17 | 0 | 0 | 18 | 10 | 0 |
| Second yellow deals, 3 in. by 11 in. | 18 | 10 | 0 | 20 | 0 | 0 |
| " " 3 in. by 9 in. | 17 | 10 | 0 | 19 | 0 | 0 |
| Battens, 2½ in. and 3 in. by 7 in. | 13 | 10 | 0 | 14 | 10 | 0 |
| Third yellow deals, 3 in. by 11 in. and 9 in. | 15 | 10 | 0 | 16 | 10 | 0 |
| Battens, 2½ in. and 3 in. by 7 in. | 11 | 10 | 0 | 12 | 10 | 0 |

## PRICES CURRENT (*continued*).

### WOOD.

| | At per standard. £ | s. | d. | £ | s. | d. |
|---|---|---|---|---|---|---|
| Petersburg: first yellow deals, 3 in. by 11 in. | 21 | 0 | 0 | 22 | 10 | 0 |
| Do. 3 in. by 9 in. | 18 | 0 | 0 | 19 | 10 | 0 |
| Battens | 13 | 10 | 0 | 15 | 0 | 0 |
| Second yellow deals, 3 in. by 11 in. | 16 | 0 | 0 | 17 | 0 | 0 |
| Do. 3 in. by 9 in. | 14 | 10 | 0 | 16 | 0 | 0 |
| Battens | 11 | 0 | 0 | 12 | 10 | 0 |
| Third yellow deals, 3 in. by 11 in. | 13 | 10 | 0 | 14 | 0 | 0 |
| Do. 3 in. by 9 in. | 13 | 0 | 0 | 14 | 0 | 0 |
| Battens | 10 | 0 | 0 | 11 | 0 | 0 |
| White Sea and Petersburg:— | | | | | | |
| First white deals, 3 in. by 11 in. | 14 | 10 | 0 | 15 | 10 | 0 |
| " " 3 in. by 9 in. | 13 | 10 | 0 | 14 | 10 | 0 |
| Battens | 11 | 0 | 0 | 12 | 0 | 0 |
| Second white deals, 3 in. by 11 in, | 13 | 10 | 0 | 14 | 10 | 0 |
| " " 3 in. by 9 in. | 12 | 10 | 0 | 13 | 10 | 0 |
| " " battens | 9 | 10 | 0 | 10 | 10 | 0 |
| Pitch-pine: deals | 16 | 0 | 0 | 18 | 0 | 0 |
| Under 2 in. thick extra | 0 | 10 | 0 | 1 | 0 | 0 |
| Yellow Pine—First, regular sizes | 33 | 0 | 0 | upwards. | | |
| Oddments | 22 | 0 | 0 | 24 | 0 | 0 |
| Seconds, regular sizes | 24 | 10 | 0 | 26 | 10 | 0 |
| Yellow Pine Oddments | 20 | 0 | 0 | 22 | 0 | 0 |
| Kauri Pine—Planks, per ft. cube | 0 | 3 | 6 | 0 | 4 | 6 |
| Danzig and Stettin Oak Logs—Large, per ft. cube | 0 | 2 | 6 | 0 | 3 | 6 |
| Small " " | 0 | 2 | 3 | 0 | 2 | 6 |
| Wainscot Oak Logs, per ft. cube | 0 | 5 | 0 | 0 | 5 | 6 |
| Dry Wainscot Oak, per ft. sup. as inch | 0 | 0 | 7 | 0 | 0 | 8 |
| ¾ in. do. do. | 0 | 0 | 6½ | — | | |
| Dry Mahogany—Honduras, Tabasco, per ft. sup. as inch | 0 | 0 | 9 | 0 | 0 | 11 |
| Selected, Figury, per ft. sup. as inch | 0 | 1 | 6 | 0 | 2 | 0 |
| Dry Walnut, American, per ft. sup. as inch | 0 | 0 | 10 | 0 | 1 | 0 |
| Teak, per load | 17 | 0 | 0 | 21 | 0 | 0 |
| American Whitewood Planks—per ft. cube | 0 | 4 | 0 | — | | |
| Prepared Flooring— | Per square. | | | | | |
| 1 in. cy 7 in. yellow, planed and shot | 0 | 13 | 6 | 0 | 17 | 6 |
| 1 in. by 7 in. yellow, planed and matched | 0 | 14 | 0 | 0 | 18 | 0 |
| 1¼ in. by 7 in. yellow, planed and matched | 0 | 16 | 0 | 1 | 1 | 6 |
| 1 in. by 7 in. white, planed and shot | 0 | 11 | 6 | 0 | 13 | 6 |
| 1 in. by 7 in. white, planed and matched | 0 | 12 | 0 | 0 | 14 | 0 |
| 1¼ in. by 7 in. white, planed and matched | 0 | 14 | 6 | 0 | 16 | 6 |
| ¾ in. by 7 in. yellow, matched and beaded or V-jointed boards | 0 | 11 | 0 | 0 | 13 | 6 |
| ¾ in. by 7 in. do. do. do. | 0 | 14 | 0 | 0 | 18 | 0 |
| 1 in. by 7 in. white do. do. | 0 | 10 | 0 | 0 | 11 | 6 |
| 1 in. by 7 in. do. do. do. | 0 | 11 | 6 | 0 | 13 | 6 |

6-in. at 6d. to 9d. per square less than 7-in.

### JOISTS, GIRDERS, &c.

| | In London, or delivered Railway Vans, per ton. £ | s. | d. | | £ | s. | d. |
|---|---|---|---|---|---|---|---|
| Rolled Steel Joists, ordinary sections | 6 | 5 | 0 | ... | 7 | 5 | 0 |
| Compound Girders, " " | 8 | 2 | 6 | ... | 9 | 5 | 0 |
| Angles, Tees and Channels, ordinary sections | 7 | 17 | 6 | ... | 8 | 17 | 6 |
| Flitch Plates | 8 | 5 | 0 | ... | 8 | 15 | 0 |
| Cast Iron Columns and Stanchions, including ordinary patterns | 7 | 2 | 6 | ... | 8 | 5 | 6 |

### METALS.

| | Per ton, in London £ | s. | d. | | £ | s. | d. |
|---|---|---|---|---|---|---|---|
| IRON— | | | | | | | |
| Common Bars | 7 | 10 | 0 | ... | 8 | 0 | 0 |
| Staffordshire Crown Bars, good merchant quality | 8 | 0 | 0 | ... | 8 | 10 | 0 |
| Staffordshire "Marked Bars" | 10 | 10 | 0 | ... | — | | |
| Mild Steel Bars | 8 | 15 | 0 | ... | 9 | 5 | 0 |
| Hoop Iron, basis price | 9 | 5 | 0 | ... | 9 | 10 | 0 |
| " " galvanised | 17 | 10 | 0 | ... | — | | |

(*And upwards, according to size and gauge.)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Sheet Iron (Black)— | | | | | | | |
| Ordinary sizes to 20 g. | 9 | 15 | 0 | ... | — | | |
| " " 24 g. | 10 | 15 | 0 | ... | — | | |
| " " 26 g. | 12 | 5 | 0 | ... | — | | |
| Sheet Iron, Galvanised, flat, ordinary quality— | | | | | | | |
| Ordinary sizes—6 ft. by 2 ft. to 3 ft. to 20 g | 12 | 15 | 0 | ... | — | | |
| Ordinary sizes to 22 g. and 24 g. | 13 | 5 | 0 | ... | — | | |
| " " 26 g. | 14 | 5 | 0 | ... | — | | |
| Sheet Iron, Galvanised, flat, best quality— | | | | | | | |
| Ordinary sizes to 20 g. | 16 | 0 | 0 | ... | — | | |
| " " 22 g. and 24 g. | 16 | 10 | 0 | ... | — | | |
| " " 26 g. | 18 | 0 | 0 | ... | — | | |
| Galvanised Corrugated Sheets— | | | | | | | |
| Ordinary sizes, 6 ft. to 8 ft. 20 g. | 12 | 15 | 0 | ... | — | | |
| " " 22 g. and 24 g. | 13 | 5 | 0 | ... | — | | |
| " " 26 g. | 14 | 0 | 0 | ... | — | | |
| Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. by 20 g. and thicker | 11 | 15 | 0 | ... | — | | |
| Best Soft Steel Sheets, 22 g. and 24 g. | 12 | 15 | 0 | ... | — | | |
| " " " 26 g. | 14 | 0 | 0 | ... | — | | |
| Cut nails, 3 in. to 6 in. | 9 | 5 | 0 | ... | 9 | 15 | 0 |

(Under 3 in., usual trade extras.)

### LEAD, &c.

| | Per ton, in London. £ | s. | d. | | £ | s. | d. |
|---|---|---|---|---|---|---|---|
| LEAD—Sheet, English, 3 lbs. and up | 14 | 0 | 0 | ... | — | | |
| Pipe in coils | 14 | 10 | 0 | ... | — | | |
| Soil pipe | 17 | 0 | 0 | ... | — | | |
| Compo Pipe | 17 | 0 | 0 | ... | — | | |
| ZINC—Sheet— | | | | | | | |
| Vieille Montagne ton | 26 | 0 | 0 | ... | — | | |
| Silesian | 25 | 15 | 0 | ... | — | | |
| COPPER— | | | | | | | |
| Strong Sheet per lb. | 0 | 0 | 10½ | ... | — | | |
| Thin " | 0 | 0 | 11½ | ... | — | | |
| Copper nails " | 0 | 0 | 11 | ... | — | | |
| BRASS— | | | | | | | |
| Strong Sheet per lb. | 0 | 0 | 10 | ... | — | | |
| Thin " | 0 | 0 | 11 | ... | — | | |
| TIN—English Ingots " | 0 | 1 | 4 | ... | — | | |
| SOLDER—Plumbers' " | 0 | 0 | 6 | ... | — | | |
| Tinmen's " | 0 | 0 | 8 | ... | — | | |
| Blowpipe " | 0 | 0 | 9 | ... | — | | |

## PRICES CURRENT (*continued*).

### ENGLISH SHEET GLASS IN CRATES.

| | | |
|---|---|---|
| 15 oz. thirds | 2¼d. | per ft. delivered |
| " fourths | 1¾d. | " " |
| 21 oz. thirds | 3¼d. | " " |
| " fourths | 2½d. | " " |
| 26 oz. thirds | 3¾d. | " " |
| " fourths | 2¾d. | " " |
| 32 oz. thirds | 4¼d. | " " |
| " fourths | 4¼d. | " " |
| Fluted sheet, 15 oz. | 2½d. | " " |
| " 21 oz. | 3¼d. | " " |
| ½ Hartley's Rolled Plate | 1¾d. | " " |
| ⅝ " " " | 2d. | " " |
| ¼ " " " | 2½d. | " " |

### OILS, &c.

| | | £ | s. | d. |
|---|---|---|---|---|
| Raw Linseed Oil in pipes or barrels | per gallon | 0 | 1 | 9 |
| " " " in drums | " | 0 | 2 | 1 |
| Boiled " " in pipes or barrels | " | 0 | 2 | 0 |
| " " " in drums | " | 0 | 2 | 4 |
| Turpentine, in barrels | " | 0 | 3 | 8 |
| " in drums | " | 0 | 3 | 10 |
| Genuine Ground English White Lead | per ton | 19 | 0 | 0 |
| Red Lead, Dry | " | 19 | 0 | 0 |
| Best Linseed Oil Putty | per cwt. | 0 | 8 | 0 |
| Stockholm Tar | per barrel | 1 | 12 | 0 |

### VARNISHES, &c.

| | Per gallon. £ | s. | d. |
|---|---|---|---|
| Fine Pale Oak Varnish | 0 | 8 | 0 |
| Pale Copal Oak | 0 | 10 | 6 |
| Superfine Pale Elastic Oak | 0 | 12 | 6 |
| Fine Extra Hard Church Oak | 0 | 10 | 0 |
| Superfine Hard-drying Oak, for seats of Churches | 0 | 14 | 0 |
| Fine Elastic Carriage | 0 | 12 | 6 |
| Superfine Pale Elastic Carriage | 0 | 16 | 0 |
| Fine Pale Maple | 0 | 16 | 0 |
| Finest Pale Durable Copal | 0 | 18 | 0 |
| Extra Pale French Oil | 1 | 1 | 0 |
| Eggshell Flatting Varnish | 0 | 18 | 0 |
| White Copal Enamel | 1 | 4 | 0 |
| Extra Pale Paper | 0 | 12 | 0 |
| Best Japan Gold Size | 0 | 10 | 6 |
| Best Black Japan | 0 | 16 | 0 |
| Oak and Mahogany Stain | 0 | 9 | 0 |
| Brunswick Black | 0 | 8 | 6 |
| Berlin Black | 0 | 16 | 0 |
| Knotting | 0 | 10 | 0 |
| French and Brush Polish | 0 | 10 | 0 |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"THE BUILDER" (Published Weekly) is supplied DIRECT from the Office to residents in any part of the United Kingdom, at the rate of 19s. per annum (52 numbers) PREPAID. To all parts of Europe, America, Australia, New Zealand, India, China, Ceylon, &c., 26s. per annum. Remittances (payable to J. MORGAN) should be addressed to the publisher of "THE BUILDER," Catherine-street, W.C.

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C. & W. (Amounts should have been stated.)

NOTE.—The responsibility of signed articles, letters, and papers read at meetings rests, of course, with the authors.

*We cannot undertake to return rejected communications.*

Letters or communications (beyond mere news items) which have been duplicated for other journals are NOT DESIRED.

All communications must be authenticated by the name and address of the sender, whether for publication or not. No notice can be taken of anonymous communications.

We are compelled to decline pointing out books and giving addresses.

Any commission to a contributor to write an article, or to execute or lend a drawing for publication, is given subject to the approval of the article or drawing, when received, by the Editor, who retains the right to reject it if unsatisfactory. The receipt by the author of a proof of an article in type does not necessarily imply its acceptance.

All communications regarding literary and artistic matters should be addressed to THE EDITOR; those relating to advertisements and other exclusively business matters should be addressed to THE PUBLISHER, and *not* to the Editor.

## TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than* 10 *a.m. on Thursdays.* [N.B.—We cannot publish Tenders unless authenticated either by the architect or the building-owner; and we cannot publish announcements of Tenders accepted unless the amount of the Tender is given, nor any list in which the lowest Tender is under 100*l.*, unless in some exceptional cases and for special reasons.]

* Denotes *accepted.* † Denotes *provisionally accepted.*

ASHBY-DE-LA-ZOUCHE.—For the execution of street works, &c., Sun and Thorne streets, Woodville, for the Hartshorne Rural District Council:—

| | | | |
|---|---|---|---|
| Edwin Clarke | £1,047 2 9 | Fitzmaurice & Co., Ltd. | £981 16 2 |
| Bilshaw & Son | 1,036 10 6 | Lowe & Sons, Burton-on-Trent* | 930 0 0 |
| Wm. Hopkins | 1,012 8 3 | | |

[*See also page* 507.

flexible attachments to the upper and lower portions of the window-frame in such manner that by pulling upon said cords or the like in either direction, the roller or similar device is caused to travel vertically over the surface of the glass. Means are also provided whereby the position of the cleaning device relatively to the window-frame may be adjusted horizontally, in order that every part of the glass may be cleaned.

19,831 of 1903.—J. GREEN, T. GREEN, and J. S. GREEN: *Roofing Tiles.*

This invention relates to roofing tiles, and consists in forming a pan tile with two corrugations or rolls. This enables the tile to rest more firmly on the lath, and also enables a nail hole to be made in the tile out of the water channel, to avoid leakage.

27,538 of 1902.—B. J. B. MILLS (E. Brousse): *Slabs or Blocks for Paving, Flagging, Tiling, and the like.*

Slabs or blocks for paving, flagging, and the like, consisting in the combination of a mass of plastic material with metallic frames, supports, or strengtheners embedded therein, such frames, supports, or strengtheners having solid or hollow bars of any desired form rising through the plastic material flush with the surface of the slab or block, and connected together at their base.

19,630 of 1903.—A. ETTER: *Valves or Gates for Use in Connexion with Sluices and the like.*

An automatic sluice valve in which a floating flap, whose axis of rotation is located in the plane of the highest (desired) water level, is arranged in front of a weighted flap moving about a horizontally-mounted axis, which flap in the perpendicular position protects the weighted valve in its closed position at low water, but is lifted up when the water level reaches it, and thereby exposes the surface of the weighted valve so that it is turned over by the water.

27,501 of 1902.—S. RYAN: *Feed Mechanism for Use in the Manufacture of Asphalt or the like.*

This invention relates to a feed mechanism for use in the manufacture of asphalt, and is specially applicable for use in conjunction with the invention set forth in Patent No. 5,835 of 1902. Its object is to provide means for automatically regulating the amount of tar entering into the composition in proportion to the weight of the stone. The supply is governed by a pair of sluice valves or dampers applied to the feed pipe one above the other, and one being shut when the other is open, after the manner of the well-known shot flask. The stone to be mixed with the tar is dropped intermittently into the mixing chamber by means of a tumbler or double hopper, which is pivotally supported above said chamber in such manner that when one side has received sufficient stone it turns over and discharges it, and at the same time the other side is placed in readiness to receive a charge, and so on. The hopper is connected to the tar escapement mechanism by levers or other suitable means, and it will thus be seen that when one side of the hopper is down the tar is filling the measuring space in the feed pipe, and when the other side is down the charge of tar is allowed to escape and mix with the stone.

## MEETINGS.

FRIDAY, NOVEMBER 13.

*Sanitary Institute (Lectures for Sanitary Officers).*—7 p.m.

MONDAY, NOVEMBER 16.

*Royal Institute of British Architects.*—Monsieur J. T. Homolle, Director of the French School at Athens, on "Le Trésor de Cnide et les Monuments de l'Art Ionien à Delphes." 8 p.m. (The paper will be illustrated by a collection of drawings, known as the "Dessins Tournaire," lent for the occasion by the French Government.)

*Sanitary Institute (Lectures for Sanitary Officers).*—7 pm.

*Liverpool Architectural Society.*—Mr. H. Chatfeild Clarke on "The Bill for Altering the Law of Ancient Lights." 8 p.m.

TUESDAY, NOVEMBER 17.

*Institute of Sanitary Engineers (Lectures in Practical Sanitary Science).*—Mr. W. J. Dibdin, F.I.C., on "Sewage Disposal." 7 p.m.

*Institution of Civil Engineers.*—Paper to be further discussed: "Tensile Tests of Mild Steel, and the Relation of Elongation to the Size of the Test-Bar." By Professor W. C. Unwin, B.Sc., F.R.S. 8 p.m.

WEDNESDAY, NOVEMBER 18.

*Quantity Surveyors' Association.*—General meeting, Holborn Restaurant. 4 p.m.

*Architectural Association (Discussion Section).*—Mr. M. G. Pechell on "Practical Travelling on the Continent." 7.30 p.m.

*Society of Arts.*—Opening meeting of the 150th Session. Address by Sir W. Abney, K.C.B., Chairman of Council. 8 p.m.

*Sanitary Institute (Demonstrations for Sanitary Officers).*—Inspection at Harrison & Barber's knacker yard, Winthrop-street, Whitechapel, E. 3 p.m.

*Builders' Foremen and Clerks of Works' Institution.*—Ordinary meeting of the members. 8 p.m.

*St. Paul's Ecclesiological Society.*—Dr. J. Wickham Legg, F.S.A., on "The Bisellow Inventory of 1783: Its Genuineness and Curiosities." 8 p.m.

THURSDAY, NOVEMBER 19.

*Sanitary Institute (Lectures for Sanitary Officers).*—7 p.m.

*Leeds and Yorkshire Architectural Society.*—Address by President, Mr. Butler Wilson, and distribution of prizes. 7.30 p.m.

FRIDAY, NOVEMBER 20.

*Architectural Association.*—Mr. H. M. Cautley on "Farm Buildings." 7.30 p.m.

*Sanitary Institute (Lectures for Sanitary Officers).*—7 p.m.

*Glasgow Architectural Craftsmen's Society.*—Mr. J. C. Walker on "Planning and Construction of Burgh Buildings." 8 p.m.

*Institution of Mechanical Engineers.*—The following Papers will be read and discussed so far as time permits:—(1) "Roofing Existing Shops while Work is Proceeding," by Mr. R. H. Fowler: (2) "Experiments on the Efficiency of Centrifugal Pumps," by Mr. Thomas E. Stanton, D.Sc. 8 p.m.

SATURDAY, NOVEMBER 21.

*Junior Institution of Engineers.*—Visit to Orchard Dock, Blackwall, to witness a demonstration of fire-extinguishing, &c., by invitation of the Clayton Company. 2.30 p.m.

## SOME RECENT SALES OF PROPERTY:

### ESTATE EXCHANGE REPORT.

October 30.—By HAMPTON & SONS (at Exeter).

| | |
|---|---|
| Beaford, Devon.—The Beaford Estate, 405 a. 3 r. 9 p., f. | £4,700 |
| Beaford Wood and allotments, 49 a. 1 r. 14 p., f. | 550 |

By SURRIDGE & SON (at Chelmsford).

| | |
|---|---|
| Totham, Essex.—Little Totham Hall Farm, 205 a. 3 r. 27 p., f., y.r. 175*l.* | 2,250 |

October 31.—By FLEURET SONS & ADAMS (at Canterbury).

| | |
|---|---|
| Grove Ferry, Kent.—The Grove Ferry Hotel, 20 a., f., with goodwill | 4,300 |

By THORNBARROW & Co. (at Keswick).

| | |
|---|---|
| Barrowdale, Westmorland.—Greenbank Estate, 77 a. 2 r. 28 p., f. | 3,070 |

November 2.—By MAY & ROWDEN.

| | |
|---|---|
| Oxford-st.—Nos. 399, 401, 403 and 405: also 1 and 2, Thomas-st. (S.), u.t. 56½ yrs., g.r. 250*l.*, y.r. 1,250*l.* | 20,500 |

By FIELD & SONS.

| | |
|---|---|
| Bromley, Kent.—Freeland's-rd., the Freeland's Tavern, f., y.r. 65*l.* | 1,850 |
| Park-rd., the Crown and Anchor, p.-h., f.g.r. 50*l.*, reversion in 61¼ yrs. | 1,320 |
| 21, Park-rd. (S.), with blacksmith shop adjoining, f., y.r. 65*l.* | 1,155 |
| Clapton.—25 to 33 (odd), Cricketfield-rd., f., y.r. 192*l.* | 3,005 |
| Bayswater.—1, Alexander Mews, u.t. 46½ yrs., g.r. 4*l.*, v.r. 22*l.* | 230 |

By FISHER, STANHOPE & DRAKE.

| | |
|---|---|
| Stoke Newington.—58, Osbaldeston-rd., u.t. 75 yrs., g.r. 8*l.* 10s., e.r. 50*l.* | 530 |

By LONG & SONS.

| | |
|---|---|
| Hammersmith.—63 and 65, King-st. (S.), u.t. 48 yrs., g.r. 32*l.*, y.r. 220*l.* | 5,850 |
| 20 and 22, Black's-rd., with slaughter-house, sheep-pen, &c., u.t. 8 yrs., g.r. 8*l.* 15s. | 250 |

November 3.—By DAVID BURNETT & Co.

| | |
|---|---|
| Chiswick.—Bedford-rd., a plot of freehold building land, y.r. 35*l.* | 1,000 |
| 4, Woodstock-rd., u.t. 72 yrs., g.r. 10*l.*, y.r. 45*l.* | 450 |

By C. W. DAVIES & SON.

| | |
|---|---|
| Islington.—Cloudesley-rd., f.g.r. 4*l.*, reversion in 19 yrs. | 225 |
| Tottenham.—1 to 6, Chalgrove-rd., u.t. 75 yrs., g.r. 30*l.*, w.r. 141*l.* 14s. | 700 |
| Manor Park.—112 and 114, Herbert-rd., f., w.r. 54*l.* 12s. | 535 |
| Clapton.—180, Glyn-rd., u.t. 73¼ yrs., g.r. 8*l.*, e.r. 60*l.* | 450 |

By LINNETT & LANE.

| | |
|---|---|
| Harlesden.—101, Drayton-rd., u.t. 97 yrs., g.r. 5*l.* 10s., y.r. 28*l.* | 245 |

By MORETON RICHES.

| | |
|---|---|
| Chelsea.—51 and 53, Redburn-st., u.t. 49 yrs., g.r. 16*l.*, y.r. 110*l.* | 1,200 |
| Wandsworth.—70, Wakehurst-rd., u.t. 81 yrs., g.r. 6*l.* 10s., w.r. 45*l.* 10s. | 315 |
| Battersea.—64, Henley-st., u.t. 63½ yrs., g.r. 6*l.*, w.r. 33*l.* 16s. | 175 |

By WM. WESTON.

| | |
|---|---|
| Shepherd's Bush.—37, Stowe-rd., u.t. 73 yrs., g.r. 7*l.*, w.r. 40*l.* 6s. | 310 |
| 28, Stowe-rd., u.t. 63 yrs., g.r. 10*l.*, e.r. 30*l.* | 270 |
| Acton.—133, Park-rd. North, u.t. 75½ yrs., g.r. 6*l.*, w.r. 35*l.* 2s. | 200 |
| Dulwich.—2, Allison-gdns., u.t. 70½ yrs., g.r. 10*l.* 10s., e.r. 60*l.* | 480 |

By WILLIS, CROUCH & LEE.

| | |
|---|---|
| Houndsditch.—18, 19, 20, 21 and 22, Carter-st. (S.), u.t. 36 yrs., g.r. 57*l.* 12s., y.r. 287*l.* 18s. | 1,680 |
| 13 and 14, Exchange-pl. (S.), u.t. 33½ yrs., g.r. 12*l.* 8s., y.r. 60*l.* | 600 |

By WOODS'.

| | |
|---|---|
| Hackney.—21 and 22, Margaret-st. (S.), u.t. 37 yrs., g.r. 2*l.*, w.r. 53*l.* 6s. | 325 |

By ORGILL, MARKS & LAWRENCE (at Masons' Hall Tavern).

| | |
|---|---|
| Lambeth.—Roupell-st., the King's Arms, p.-h., u.t. 28½ yrs., y.r. 90*l.*, with goodwill | 10,500 |
| Camden Town.—Stanhope-st., the Hope p.-h., a profit rental of 51*l.* 18s. for 35 years | 800 |

November 4.—DUNCAN & KIMPTON.

| | |
|---|---|
| Bayswater.—Leinster-sq., l.g.r. 40*l.*, u.t. 49 yrs., g.r. 2*l.* | 725 |
| Brompton.—Ifield-rd., l.g.r. 25*l.*, u.t. 59 yrs., g.r. 6*l.* | 420 |
| Hampstead.—Adelaide-rd., l.g.r. 20*l.*, u.t. 45 yrs., g.r. 3*l.* | 325 |
| Adelaide-rd., l.g.r. 29*l.* 8s., u.t. 49 yrs., g.r. 7*l.* | 415 |
| Holloway.—9, 17, and 19, Baversbrook-rd., u.t. 66½ yrs., g.r. 18*l.*, y.r. 92*l.* | 1,080 |

By FOSTER & CRANFIELD.

| | |
|---|---|
| Brondesbury.—Shoot-up-Hill, Ravens, u.t. 76 yrs., g.r. 3*l.* 3s., y.r. 115*l.* (including mortgage) | 1,160 |

By W. G. HARRIS & Co.

| | |
|---|---|
| Hendon.—1, The Burroughs (S.), f., y.r. 40*l.* | 855 |
| Prince of Wales-rd., f.g.r. 19*l.*, reversion in 61 yrs. | 495 |
| 1 to 5, Oakleigh-villas, f., w.r. 152*l.* 16s. | £1,895 |
| 6, Oakleigh-villas (with laundry, stables, &c.), f., y.r. 75*l.* | 980 |

By HY. HOLMES & Co.

| | |
|---|---|
| Regent's Park.—31, Chester-ter. (with stabling), u.t. 12 yrs., g.r. 52*l.* 10s., y.r. 55*l.* | 1,050 |
| Oxford-st.—Wells-st., Welbeck House (flats), u.t. 39½ yrs., g.r. 24*l.*, y.r. 234*l.* 6s. | 1,450 |
| Ealing.—264, Uxbridge-rd., u.t. 89 yrs., g.r. 8*l.*, y.r. 80*l.* | 1,650 |
| 288, Uxbridge-rd., u.t. 72 yrs., g.r. 8*l.*, y.r. 36*l.* | 640 |
| Holloway.—42, Crayford-rd., u.t. 63 yrs., g.r. 7*l.*, e.r. 48*l.* | 450 |
| Tottenham.—3, Daleview-rd., u.t. 56 yrs., g.r. 6*l.*, e.r. 34*l.* | 280 |
| Twickenham.—2, Twickenham-pl. (S.), c., y.r. 40*l.* | 620 |

By N. EASTON & SON (at Hull).

| | |
|---|---|
| Sutton, Yorks.—Noddle Hill Farm, 157 a., f. | 6,000 |
| Enclosure of grass land, 3 a. 2 r. 0 p., f. | 400 |

November 5.—By B. R. BOSTOCK.

| | |
|---|---|
| Forest Gate.—75 and 77, Clova-rd., f., y.r. 64*l.* | 990 |

By COLES & Co.

| | |
|---|---|
| Pirbright, Surrey.—Main-rd., a plot of land, 1 a. 0 r. 7 p., f. | 120 |
| Woking, Surrey.—Pirbright-rd., a plot of land, 2 a. 2 r. 26 p., f. | 290 |

By J. G. DEAN & Co.

| | |
|---|---|
| Wimbledon.—204, 206, 208, 216, 218, and 220, Haydon's-rd., u.t. 75 yrs., g.r. 30*l.*, y.r. 156*l.* | 1,015 |
| Tooting.—42, Vant-rd., u.t. 74 yrs., g.r. 6*l.*, e.r. 30*l.* | 200 |

By FRANCIS DOD & Co.

| | |
|---|---|
| Stoke Newington.—47, Lordship-rd., u.t. 60 yrs., g.r. 2*l.*, e.r. 50*l.* | 575 |

By EDWIN EVANS (at Battersea).

| | |
|---|---|
| Battersea.—86 to 100 (even), Wickersley-rd., u.t. 63 yrs., g.r. 40*l.*, w.r. 297*l.* 14s. | 1,855 |
| 103, Lavender-rd., u.t. 42¾ yrs., g.r. 5*l.*, w.r. 31*l.* 4s. | 165 |
| 80, Lavender-sweep, u.t. 76½ yrs., g.r. 7*l.* 10s., e.r. 48*l.* | 430 |
| 14, Currie-rd., f., w.r. 33*l.* 16s. | 350 |
| 60 and 62, Maysoule-rd., u.t. 75 yrs., g.r. 10*l.*, w.r. 57*l.* 4s. | 440 |
| 31, Millgrove-st., u.t. 70 yrs., g.r. 4*l.* 10s., w.r. 39*l.* | 245 |
| 12, Patience-rd., u.t. 74 yrs., g.r. 6*l.*, w.r. 39*l.* | 285 |
| Wandsworth.—14, Milford-st., u.t. 27 yrs., g.r. 6*l.* 6s., w.r. 31*l.* 4s. | 150 |
| 8b, East Hill (S.), u.t. 72 yrs., g.r. 13*l.*, y.r. 80*l.* | 515 |

November 6.—By WM. CLARKSON.

| | |
|---|---|
| East Ham.—1, 3, and 5, Arragon-rd., f., w.r. 93*l.* 12s. | 850 |
| Poplar.—81, 83, and 87, Abbott-rd., u.t. 70 yrs., g.r. 15*l.*, w.r. 117*l.* | 895 |
| 38, Bath-st. (S.), f., y.r. 36*l.* 8s. | 415 |

***Contractions used in these lists.***—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; p. for possession; e.r. for estimated rental; w.r. for weekly rental; q.r. for quarterly rental; y.r. for yearly rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; la. for lane; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; av. for avenue; gdns. for gardens; yd. for yard; gr. for grove; b.h. for beer-house; p.h. for public-house; o. for offices; s. for shops.

## PRICES CURRENT OF MATERIALS.

*** Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

### BRICKS, &c.

| | £ s. d. | |
|---|---|---|
| Hard Stocks | 1 16 6 | per 1,000 alongside, in river |
| Rough Stocks and Grizzles | 1 13 0 | " " " |
| Facing Stocks | 2 12 0 | " " " |
| Shippers | 2 5 0 | " " " |
| Flettons | 1 11 0 | " at railway depôt |
| Red wire Cuts | 1 13 0 | " " " |
| Best Fareham Red | 3 12 0 | " " " |
| Best Red Pressed Ruabon Facing | 5 0 0 | " " " |
| Best Blue Pressed Staffordshire | 4 5 0 | " " " |
| Do. Bullnose | 4 11 0 | " " " |
| Best Stourbridge Fire Bricks | 4 8 0 | " " " |
| GLAZED BRICKS. | | |
| Best White and Ivory Glazed Stretchers | 13 0 0 | " " " |
| Headers | 12 0 0 | " " " |
| Quoins, Bullnose, and Flats | 17 0 0 | " " " |
| Double Stretchers | 19 0 0 | " " " |
| Double Headers | 16 0 0 | " " " |
| One Side and two Ends | 19 0 0 | " " " |
| Two Sides and one End | 20 0 0 | " " " |
| Splays, Chamfered, Squints | 20 0 0 | " " " |
| Best Dipped Salt Glazed Stretchers and Headers | 12 0 0 | " " " |
| Quoins, Bullnose, and Flats | 14 0 0 | " " " |
| Double Stretchers | 15 0 0 | " " " |
| Double Headers | 14 0 0 | " " " |
| One Side and two Ends | 15 0 0 | " " " |
| Two Sides and one End | 15 0 0 | " " " |
| Splays, Chamfered, Squints | 14 0 0 | " " " |
| Second Quality White and Dipped Salt Glazed | 2 0 0 | " less than best. |

| | s. d. | |
|---|---|---|
| Thames and Pit Sand | 6 9 | per yard, delivered. |
| Thames Ballast | 6 0 | " " |
| Best Portland Cement | 30 0 | per ton, delivered. |
| Best Ground Blue Lias Lime | 20 6 | " |

NOTE.—The cement or lime is exclusive of the ordinary charge for sacks.

| | | |
|---|---|---|
| Grey Stone Lime | 12s. 0d. | per yard, delivered. |
| Stourbridge Fire Clay in sacks | 27s. 6d. | per ton at rly. dpt |

## PRICES CURRENT (*continued*).

### STONE.

| | | |
|---|---|---|
| BATH STONE—delivered on road waggons, Paddington depôt | s. d. | 6½ per ft. cube. |
| Do. do. delivered on road waggons, Nine Elms Depôt | 1 8½ | „ „ |
| PORTLAND STONE (20 ft. average)— | | |
| Brown Whitbed, delivered on road waggons, Paddington depôt, Nine Elms depôt, or Pimlico Whrf | 2 1 | „ „ |
| White Basebed, delivered on road waggons, Paddington depôt, Nine Elms depôt, or Pimlico Wharf | 2 2½ | „ „ |
| | s. d. | |
| Ancaster in blocks | 1 11 | per ft. cube, deld. rly. depôt |
| Beer in blocks | 1 6 | „ „ |
| Greenshill „ | 1 10 | „ „ |
| Darley Dale in blocks | 2 4 | „ „ |
| Red Corsehill „ | 2 5 | „ „ |
| Closeburn Red Freestone | 2 0 | „ „ |
| Red Mansfield „ | 2 4 | „ „ |

YORK STONE—*Robin Hood Quality.*

| | | |
|---|---|---|
| | s. d. | |
| Scappled random blocks | 2 10 | per ft. cube, deld. rly. depôt |
| 6 in. sawn two sides landings to sizes (under 40 ft. super.) | 2 3 | per foot super. „ |
| 6 in. Rubbed two sides Ditto, Ditto | 2 6 | „ „ |
| 3 in. Sawn two sides slabs (random sizes) | 0 11½ | „ „ |
| 2 in. to 2½ in. Sawn one side slabs (random sizes) | 0 7½ | „ „ |
| 1½ in. to 2 in. ditto, ditto | 0 6 | „ „ |
| Scappled random blocks | 3 0 | per ft. cube „ |
| 6 in. sawn two sides, landings to sizes (under 40 ft. sup.) | 2 8 | per ft. super. „ |
| 6 in Rubbed two sides Ditto | — | „ „ |
| 3 in. sawn two sides slabs (random sizes) | 1 2 | „ „ |
| 2 in, self-faced random flags | 0 5 | „ „ |
| Hopton Wood (Hard Bed) in blocks | 2 3 | per ft. cube. |
| „ „ „ 6 in. sawn both sides landings | 2 7 | deld. rly. depôt. per ft. super. deld. rly. depôt. |
| „ „ „ 3 in. do. | 1 2½ | „ „ |

### SLATES.

| in. in. | £ s. d. | |
|---|---|---|
| 20×10 best blue Bangor | 13 2 6 | per 1000 of 1200 at rly.dep. |
| 20×12 „ „ | 13 17 6 | „ „ |
| 20×10 best seconds „ | 12 15 0 | „ „ |
| 20×12 „ „ „ | 13 10 0 | „ „ |
| 16× 8 best „ | 7 0 0 | „ „ |
| 20×10 best blue Portmadoc | 12 12 6 | „ „ |
| 16×8 best blue Portmadoc | 6 12 6 | „ „ |
| 20×10 best Eureka unfading green | 15 2 6 | „ „ |
| 20×12 best Eureka unfading green | 17 2 6 | „ „ |
| 18×10 „ „ | 12 10 0 | „ „ |
| 16× 8 „ „ | 10 5 0 | „ „ |
| 20×10 permanent green | 11 10 0 | „ „ |
| 18×10 „ „ | 9 10 0 | „ „ |
| 16× 8 „ „ | 6 10 0 | „ „ |

### TILES.

| | s. d. | |
|---|---|---|
| Best plain red roofing tiles | 42 0 | per 1,000 at rly. depot. |
| Hip and valley tiles | 3 7 | per doz. „ „ |
| Best Broseley tiles | 50 0 | per 1,000 „ „ |
| Do. Ornamental Tiles | 52 6 | „ „ „ |
| Hip and Valley tiles | 4 0 | per doz. „ „ |
| Best Ruabon Red, brown or brindled Do. (Edwards) | 57 6 | per 1,000 „ „ |
| Do. Ornamental Do. | 60 0 | „ „ „ |
| Hip tiles | 4 0 | per doz. „ „ |
| Valley tiles | 3 0 | „ „ „ |
| Best Red or Mottled Staffordshire Do. (Peakes) | 51 9 | per 1,000 „ „ |
| Do. Ornamental Do. | 54 6 | „ „ „ |
| Hip tiles | 4 1 | per doz. „ „ |
| Valley tiles | 3 8 | „ „ „ |
| Best "Rosemary" brand plain tiles | 48 0 | per 1,000 „ „ |
| Do. Ornamental Do | 50 0 | „ „ „ |
| Hip tiles | 4 0 | per doz. „ „ |
| Valley tiles | 3 8 | „ „ „ |

### WOOD.

| | At per standard. £ s. d. | £ s. d. | |
|---|---|---|---|
| Deals: best 3 in. by 11 in. and 4 in. by 9 in. and 11 in. | 15 10 0 | 16 10 0 | |
| Deals: best 3 by 9 | 14 10 0 | 15 10 0 | |
| Battens: best 2½ in by 7 in. and 8 in., and 3 in. by 7 in. and 8 in. | 11 10 0 | 12 10 0 | |
| Battens: best 2½ by 6 and 3 by 6 | 0 10 0 | less than 7 in. and 8 in. | |
| Deals: seconds | 1 0 0 | less than best | |
| Battens: seconds | 0 10 0 | „ „ „ „ | |
| 2 in. by 4 in. and 2 in. by 6 in. | 9 0 0 | 9 10 0 | |
| 2 in. by 4½ in. and 2 in. by 5 in. | 8 10 0 | 9 10 0 | |
| Foreign Sawn Boards— 1 in. and 1¼ in. by 7 in. | 0 10 0 | more than battens. | |
| ¾ in. | 1 0 0 | „ | |
| Fir timber: Best middling Danzig or Memel (average specification) | At per load of 50 ft. 4 10 0 | 5 0 0 | |
| Seconds | 4 5 0 | 4 10 0 | |
| Small timber (8 in. to 10 in.) | 3 12 6 | 3 15 0 | |
| Small timber (6 in. to 8 in.) | 3 0 0 | 3 10 0 | |
| Swedish balks | 2 15 0 | 3 0 0 | |
| Pitch-pine timber (30 ft. average) | 3 5 0 | 3 15 0 | |

### JOINERS' WOOD.

| White Sea: | At per standard. | | |
|---|---|---|---|
| First yellow deals, 3 in. by 11 in. | 23 0 0 | 24 0 0 | |
| 3 in. by 9 in. | 21 0 0 | 22 10 0 | |
| Battens, 2½ in. and 3 in. by 7 in. | 17 0 0 | 18 10 0 | |
| Second yellow deals, 3 in. by 11 in. | 18 10 0 | 20 0 0 | |
| „ „ 3 in. by 9 in. | 17 10 0 | 19 0 0 | |
| Battens, 2½ in. and 3 in. by 7 in. | 13 10 0 | 14 10 0 | |
| Third yellow deals, 3 in. by 11 in. and 9 in. | 15 10 0 | 16 10 0 | |
| Battens, 2½ in. and 3 in. by 7 in. | 11 10 0 | 12 10 0 | |

## PRICES CURRENT (*continued*).

### WOOD.

| | At per standard. £ s. d. | £ s. d. | |
|---|---|---|---|
| Petersburg: first yellow deals, 3 in. by 11 in. | 21 5 0 | 22 10 0 | |
| Do. 3 in. by 9 in. | 18 0 0 | 19 10 0 | |
| Battens | 13 10 0 | 15 0 0 | |
| Second yellow deals, 3 in. by 11 in. | 16 0 0 | 17 0 0 | |
| Do. 3 in. by 9 in. | 14 10 0 | 16 0 0 | |
| Battens | 11 0 0 | 12 10 0 | |
| Third yellow deals, 3 in. by 11 in. | 13 10 0 | 14 0 0 | |
| Do. 3 in. by 9 in. | 13 0 0 | 14 0 0 | |
| Battens | 10 0 0 | 11 0 0 | |
| White Sea and Petersburg:— | | | |
| First white deals, 3 in. by 11 in. | 14 10 0 | 15 10 0 | |
| „ „ 3 in. by 9 in. | 13 10 0 | 14 10 0 | |
| Battens | 11 0 0 | 12 0 0 | |
| Second white deals, 3 in. by 11 in, | 13 10 0 | 14 10 0 | |
| „ „ 3 in. by 9 in. | 12 10 0 | 13 10 0 | |
| „ „ battens | 9 10 0 | 10 10 0 | |
| Pitch-pine: deals | 16 0 0 | 18 0 0 | |
| Under 2 in. thick extra | 0 10 0 | 1 0 0 | |
| Yellow Pine—First, regular sizes | 33 0 0 | upwards. | |
| Oddments | 22 0 0 | 24 0 0 | |
| Seconds, regular sizes | 24 10 0 | 26 10 0 | |
| Yellow Pine Oddments | 20 0 0 | 22 0 0 | |
| Kauri Pine—Planks, per ft. cube | 0 3 6 | 0 4 6 | |
| Danzig and Stettin Oak Logs— Large, per ft. cube | 0 2 6 | 0 3 6 | |
| Small „ „ | 0 2 3 | 0 2 6 | |
| Wainscot Oak Logs, per ft. cube | 0 5 0 | 0 5 6 | |
| Dry Wainscot Oak, per ft. sup. as inch | 0 0 7 | 0 0 8 | |
| ¾ in. do. do. | 0 0 6½ | — | |
| Dry Mahogany—Honduras, Tabasco, per ft. sup. as inch | 0 0 9 | 0 0 11 | |
| Selected, Figury, per ft. sup. as inch | 0 1 6 | 0 2 0 | |
| Dry Walnut, American, per ft. sup. as inch | 0 0 10 | 0 1 0 | |
| Teak, per load | 17 0 0 | 21 0 0 | |
| American Whitewood Planks— per ft. cube | 0 4 0 | — | |
| Prepared Flooring— | Per square. | | |
| 1 in. cy 7 in. yellow, planed and shot | 0 13 6 | 0 17 6 | |
| 1 in. by 7 in. yellow, planed and matched | 0 14 0 | 0 18 0 | |
| 1¼ in. by 7 in. yellow, planed and matched | 0 16 0 | 1 1 6 | |
| 1 in. by 7 in. white, planed and shot | 0 11 6 | 0 13 6 | |
| 1 in. by 7 in. white, planed and matched | 0 12 6 | 0 14 0 | |
| 1¼ in. by 7 in. white, planed and matched | 0 14 6 | 0 16 6 | |
| ¾ in. by 7 in. yellow, matched and beaded or V-jointed boards | 0 11 0 | 0 13 6 | |
| ¾ in. by 7 in. do. do. do. | 0 14 0 | 0 18 0 | |
| 1 in. by 7 in. white do. do. | 0 10 0 | 0 11 6 | |
| 1 in. by 7 in. do. do. do. | 0 11 6 | 0 13 6 | |

6-in. at 6d. to 9d. per square less than 7-in.

### JOISTS, GIRDERS, &c.

| | In London, or delivered Railway Vans, per ton. £ s. d. | £ s. d. | |
|---|---|---|---|
| Rolled Steel Joists, ordinary sections | 6 5 0 | 7 5 0 | |
| Compound Girders, „ „ | 8 2 6 | 9 5 0 | |
| Angles, Tees and Channels, ordinary sections | 7 17 6 | 8 17 6 | |
| Flitch Plates | 8 5 0 | 8 15 0 | |
| Cast Iron Columns and Stanchions, including ordinary patterns | 7 2 6 | 8 5 6 | |

### METALS.

| | Per ton, in London £ s. d. | £ s. d. | |
|---|---|---|---|
| IRON— | | | |
| Common Bars | 7 10 0 | 8 0 0 | |
| Staffordshire Crown Bars, good merchant quality | 8 0 0 | 8 10 0 | |
| Staffordshire "Marked Bars" | 10 10 0 | — | |
| Mild Steel Bars | 8 15 0 | 9 5 0 | |
| Hoop Iron, basis price | 9 5 0 | 9 10 0 | |
| „ „ galvanised | 17 10 0 | — | |

(*And upwards, according to size and gauge.)

| | | | |
|---|---|---|---|
| Sheet Iron (Black)— | | | |
| Ordinary sizes to 20 g. | 9 15 0 | — | |
| „ „ 24 g. | 10 15 0 | — | |
| „ „ 26 g. | 12 5 0 | — | |
| Sheet Iron, Galvanised, flat, ordinary quality— | | | |
| Ordinary sizes—6 ft. by 2 ft. to 3 ft. to 20 g | 12 15 0 | — | |
| Ordinary sizes to 22 g. and 24 g. | 13 5 0 | — | |
| „ „ 26 g. | 14 5 0 | — | |
| Sheet Iron, Galvanised, flat, best quality— | | | |
| Ordinary sizes to 20 g. | 16 0 0 | — | |
| „ „ 22 g. and 24 g. | 16 10 0 | — | |
| „ „ 26 g. | 18 0 0 | — | |
| Galvanised Corrugated Sheets— | | | |
| Ordinary sizes, 6 ft. to 8 ft. 20 g. | 12 15 0 | — | |
| „ „ 22 g. and 24 g. | 13 5 0 | — | |
| „ „ 26 g. | 14 0 0 | — | |
| Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. by 20 g. and thicker | 11 15 0 | — | |
| Best Soft Steel Sheets, 22 g. and 24 g. | 12 15 0 | — | |
| „ „ „ 26 g. | 14 0 0 | — | |
| Cut nails, 3 in. to 6 in. | 9 5 0 | 9 15 0 | |

(Under 3 in., usual trade extras.)

### LEAD, &c.

| | Per ton, in London. £ s. d. | £ s. d. | |
|---|---|---|---|
| LEAD—Sheet, English, 3 lbs. and up | 14 0 0 | — | |
| Pipe in coils | 14 10 0 | — | |
| Soil pipe | 17 0 0 | — | |
| Compo Pipe | 17 0 0 | — | |
| ZINC—Sheet— | | | |
| Vieille Montagne ton | 26 0 0 | — | |
| Silesian | 25 15 0 | — | |
| COPPER— | | | |
| Strong Sheet per lb. | 0 0 10½ | — | |
| Thin „ | 0 0 11½ | — | |
| Copper nails „ | 0 0 11 | — | |
| BRASS— | | | |
| Strong Sheet per lb. | 0 0 10 | — | |
| Thin „ | 0 0 11 | — | |
| TIN—English Ingots „ | 0 1 4 | — | |
| SOLDER—Plumbers' „ | 0 0 6 | — | |
| Tinmen's „ | 0 0 8 | — | |
| Blowpipe „ | 0 0 9 | — | |

## PRICES CURRENT (*continued*).

### ENGLISH SHEET GLASS IN CRATES.

| | | |
|---|---|---|
| 15 oz. thirds | 2½d. | per ft. delivered |
| „ fourths | 1¾d. | „ „ |
| 21 oz. thirds | 3¼d. | „ „ |
| „ fourths | 2¾d. | „ „ |
| 26 oz. thirds | 3¾d. | „ „ |
| „ fourths | 3¼d. | „ „ |
| 32 oz. thirds | 4¼d. | „ „ |
| „ fourths | 4d. | „ „ |
| Fluted sheet, 15 oz. | 2¼d. | „ „ |
| „ 21 oz. | 3d. | „ „ |
| ½ Hartley's Rolled Plate | 1¾d. | „ „ |
| ⅝ „ „ „ | 2d. | „ „ |
| ¼ „ „ „ | 2¼d. | „ „ |

### OILS, &c.

| | | £ s. d. | |
|---|---|---|---|
| Raw Linseed Oil in pipes or barrels | per gallon | 0 1 9 | |
| „ „ „ in drums | „ | 0 2 1 | |
| Boiled „ „ in pipes or barrels | „ | 0 2 0 | |
| „ „ „ in drums | „ | 0 2 4 | |
| Turpentine, in barrels | „ | 0 3 8 | |
| „ in drums | „ | 0 3 10 | |
| Genuine Ground English White Lead | per ton | 19 0 0 | |
| Red Lead, Dry | „ | 19 0 0 | |
| Best Linseed Oil Putty | per cwt. | 0 8 0 | |
| Stockholm Tar | per barrel | 1 12 0 | |

### VARNISHES, &c.

| | Per gallon. £ s. d. |
|---|---|
| Fine Pale Oak Varnish | 0 8 0 |
| Pale Copal Oak | 0 10 6 |
| Superfine Pale Elastic Oak | 0 12 6 |
| Fine Extra Hard Church Oak | 0 10 0 |
| Superfine Hard-drying Oak, for seats of Churches | 0 14 0 |
| Fine Elastic Carriage | 0 12 6 |
| Superfine Pale Elastic Carriage | 0 16 0 |
| Fine Pale Maple | 0 16 0 |
| Finest Pale Durable Copal | 0 18 0 |
| Extra Pale French Oil | 1 1 0 |
| Eggshell Flatting Varnish | 0 18 0 |
| White Copal Enamel | 1 4 0 |
| Extra Pale Paper | 0 12 0 |
| Best Japan Gold Size | 0 10 6 |
| Best Black Japan | 0 16 0 |
| Oak and Mahogany Stain | 0 9 0 |
| Brunswick Black | 0 8 6 |
| Berlin Black | 0 16 0 |
| Knotting | 0 10 0 |
| French and Brush Polish | 0 10 0 |

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* Denotes *accepted.* † Denotes *provisionally accepted.*

ASHBY-DE-LA-ZOUCHE.—For the execution of street works, &c., Sun and Thorne streets, Woodville, for the Hartshorne Rural District Council:—

| | | | |
|---|---|---|---|
| Edwin Clarke | £1,047 2 9 | Fitzmaurice & Co., Ltd. | £961 16 2 |
| Bilshaw & Son | 1,036 10 6 | Lowe & Sons, Burton-on-Trent* | 930 0 0 |
| Wm. Hopkins | 1,012 8 3 | | |

[*See also page* 507.

# COMPETITIONS, CONTRACTS AND PUBLIC APPOINTMENTS.

*(For some Contracts, &c., still open, but not included in this List, see previous issues.)*

## COMPETITIONS.

| Nature of Work. | By whom Required. | Premiums. | Designs to be delivered |
|---|---|---|---|
| Public Baths, Selly Oak, near Birmingham | King's Norton U.D.C. | 12. 1s. | Dec. 7 |
| *Designs for New Council House & Free Library Bdgs. | Erdington U.D.C. | 50l., 30l., 20l. | Feb. 1, '04 |

## CONTRACTS.

| Nature of Work or Materials. | By whom Advertised. | Forms of Tender, &c., supplied by | Tenders to be delivered |
|---|---|---|---|
| Granite Paving Works near Manchester | Stretford U.D.C. | E. Worrall, Surveyor, Old Trafford | Nov. 17 |
| Road Works, &c., Derbyshire-lane and other streets | do. | do. | |
| Brick Culverts, Norbury | Croydon Corporation | Borough Engineer, Town Hall, Croydon | do. |
| Road Works, Woodville-road | Croydon Town Council | Borough Road Surveyor, Town Hall, Croydon | do. |
| Wesleyan School Hall, Lidgett Park, Roundhay, Leeds | ..... | W. H. Beevers, Architect, 25, Bond-street, Leeds | do. |
| Pumphouse, Lodge, &c., at Generating Stn., Greenhill | Oldham Corporation | S. W. Newington, Borough Engineer, Electricity Works, Oldham | do. |
| Sewerage Works, Barlestone | Market Bosworth R.D.C. | W. M. Sykes, Surveyor, Market Bosworth | do. |
| Heating Works at Town Hall | Bilston U.D.C. | J. P. Wakeford, Civil Engineer, Town Hall, Bilston | do. |
| Gallery to Chapel, Richmond-rd., Pontnewydd, Wales | Baptists | L. D. Jones, Cromwell-place, Pontnewydd | do. |
| Shelters, &c., Parc Gwyllt, Bridgend | Asylum Committee | W. E. R. Allen, County Council Offices, Cardiff | do. |
| Electric Lighting Installation at Library, Anderston | Glasgow Corporation | Paterson & Stewart, Architects, 14, Blythswood-square, Glasgow | do. |
| Hospital, Bagthorpe | Nottingham Corporation | F. B. Lewis, City Architect, Guildhall, Nottingham | do. |
| Additions to Mills, Pudsey, Yorks | ..... | Kendall & Bakes, Architects, Victoria-square, Leeds | Nov. 18 |
| Bridge over Wortley Brook, Brook-lane, Leeds | ..... | City Engineer, Municipal Buildings, Leeds | do. |
| Painting Works, &c., at School, Galley's Fields | Hartlepool Education Authority | H. C. Crummack, Civil Engineer, Hartlepool | do. |
| Retaining Wall, Lower Broughton-road | Salford Corporation | L. C. Evans, Town Hall, Salford | do. |
| Setts, &c. | New Mills U.D.C. | J. Pollitt, Town Hall, New Mills | do. |
| Paving Works, British and Poplar Streets | Poplar Borough Council | Borough Surveyor, High-street, Poplar | do. |
| Street Works, &c., Dumbreck-rd. to Paisley-rd., Glasg. | Ibroxhill Estate Co., Ltd. | J. Cowan, C.E., 179, West George-street, Glasgow | do. |
| Timber Groynes (nine) | Bridlington Corporation | E. R. Matthews, Civil Engineer, Town Hall, Bridlington | do. |
| Wrought-Iron Materials and Roofing | East Indian Railway Co. | C. W. Young, Nicholas-lane, London, E.C. | do. |
| Drainage Works, &c. | Oakham Guardians | J. B. Corby, Surveyor, Stamford | do. |
| Stone Steps, Copings, &c., Stanley-road | Bootle (Lancs) Corporation | B. J. Wolfenden, C.E., Town Hall, Bootle | do. |
| Electric Lighting Works at Infirmary | Whitehaven Guardians | G. Boyd, C.E., 33, Queen-street, Whitehaven | do. |
| Fireclay Goods | Nelson (Lancs) Corporation | A. J. Hope, Engineer, Gasworks, Nelson | do. |
| Street Works, &c., Hope and other streets, Earlestown | Newton-in-Makerfield U.D.C. | Surveyor, Town Hall, Earlestown, Lancs | do. |
| Street Works, &c., Markham and other roads | Manchester Corporation | Surveyor, Town Hall, Manchester | Nov. 19 |
| Lodges at Infirmary | do. | City Architect, Town Hall, Manchester | do. |
| Alterations to Fireproof Room | Houghton-le-Spring Guardians | J. G. Baty, Union Offices, William-street, Houghton-le-Spring | do. |
| Entrance Gates, &c., Royal Infirmary | Manchester Corporation | City Architect, Town Hall, Manchester | do. |
| Library, Dennistown | Glasgow Corporation | J. G. Stewart, 42, Bath-street, Glasgow | do. |
| Infirmary and Nurses' Home | Nantwich Guardians | C. E. Davenport, Architect, 152, Hospital-street, Nantwich | do. |
| Road Metal, &c., Annan | Dumfries County Council | A. V. Hart, Surveyor, Ashgrove, Dumfries | do. |
| Branch Library, The Green, Lindal-in-Furness | Dalton-in-Furness U.D.C. | W. Richardson, Surveyor, Station-road, Dalton | do. |
| Alterations to Council Schools, Arthur's Hill | Newcastle-upon-Tyne Corporation | A. Goddard, Northumberland-road, Newcastle | Nov. 20 |
| Road Works, &c., Nythbran Estate, Rhondda Valley | Lewis Merthyr Cons. Collieries, Ltd. | James & Morgan, Architects, Charles-street Chambers, Cardiff | do. |
| Drainage Works, &c., Marchiniel, near Wrexham | ..... | J. P. Evans, Architect, Argyle Chambers, Wrexham | do. |
| Granite Setts, &c. | Crompton (near Oldham) U.D.C. | F. Wild, Surveyor, Town Hall, Crompton | do. |
| Sewers, &c. Penn and Bradmore | Selsdon (Wolverhampton) R.D.C. | R. E. W. Berrington, Civil Engineer, Bank Buildings, Wolverhampton | do. |
| Parish Church, Blackpool | Building Committee | F. H. Gorst, Architect, 7, Birley-street, Blackpool | do. |
| Granite Setts, also Broken Granite (500 tons) | Epsom U.D.C. | E. R. Capon, Surveyor, Church-street, Epsom | do. |
| *Additional House at Felixstowe Coast Guard Station | The Admiralty | Director of Works Department, 21, Northumberland-avenue, W.C. | do. |
| Sewers, &c., Kingston Hill | Malden and Coombe U.D.C. | T. B. Simmons, Civil Engineer, Cambridge-road, New Malden | Nov. 21 |
| Walling Works, Park-road | Hindley (Lancs) U.D.C. | A. Holden, Civil Engineer, Council Offices, Hindley | do. |
| Paving Works, Southend-on-Sea | Essex County Council | P. J. Sheldon, Civil Engineer, Town Hall, Chelmsford | do. |
| Road Works, &c. | Cheriton (Kent) U.D.C. | A. Atkinson, Public Offices, Cheriton | do. |
| Alterations to Police Station, Normanton | West Riding County Council | County Architect, County Hall, Wakefield | Nov. 22 |
| Sewage Works, West Stow | Bury St. Edmunds Corporation | G. R. Strachan, Civil Engineer, 7, Victoria-street, S.W. | Nov. 23 |
| Water Supply Works, &c., South Benfleet, &c. | Rochford (Essex) R.D.C. | H. T. Sidwell, Engineer, Rochford | do. |
| Shops and Dwellings, Snig Hill | sheffield Corporation | Gibbs & Flockton, Architects, 15, St. James'-row, Sheffield | do. |
| Road Works, The Pavement, Seven Kings | Ilford U.D.C. | H. Shaw, Civil Engineer, Town Hall, Ilford | do. |
| Villa, Forthcath-avenue, Elgin | ..... | R. Pratt, Architect, Elgin | do. |
| Rebuilding Wall, &c. Bethel Chapel, Glyn-Neath, Wales | ..... | J. S. Thomas, Stanley House, Glyn-Neath | do. |
| Repairs to Master's Office at Workhouse | Droxford (Hants) | F. Clark, Workhouse, Droxford | do. |
| Additions to Schools, Eastwood | Keighley School Board | Wilson Bailey, Architect, Market-street, Bradford | do. |
| Cast-Iron Pipes (750 tons) | Buxton U.D.C. | G. H. Hill & Sons, Civil Engineers, 3, Victoria-street, Winchester | do. |
| Sewers, &c., Norman-road, St. Leonards | Hastings Corporation | P. H. Palmer, Civil Engineer, Town Hall | do. |
| Schools, Church-road | Tottenham Education Committee | G. E. T. Laurence, Architect, 22, Buckingham-street, Adelphi, W.C. | do. |
| Bricks and Fireclay Goods | Burton-on-Trent Corporation | F. L. Ramsden, Engineer, Gasworks, Burton-on-Trent | Nov. 24 |
| Phospor Bronze (20 tons) | Southern Mahratta R. Co., Ltd. | E. G. Thornton, 46, Queen Anne's Gate, S.W. | do. |
| *Making-up Streets | West Ham Council | Borough Engineer, Town Hall, West Ham, E. | do. |
| *Fire Hydrants, &c., Portland Cement, & Making-up Road | Wood Green U.D.C. | Council's Surveyor, Town Hall, Wood Green | Nov. 25 |
| *New District Post Office, Bootle | Commissioners of H.M. Works, &c. | H.M. Office of Works, Storey's Gate, S.W. | do. |
| *Small Cottage, Lavatories, &c., at Recreation Ground | Finchley U.D.C. | Council's Surveyor, Finchley | do. |
| *Iron Band Stand, South Park | Fulham Borough Council | Borough Engineer, Town Hall, Fulham, S.W. | do. |
| *Terra Cotta Band Stand, South Park | do. | do. | do. |
| Road Metal | Warwickshire County Council | John Wilmot, County Surveyor, Birmingham | Nov. 26 |
| *Erection of Public Buildings | Waltham Holy Cross U.D.C. | Council's Surveyor, Highbridge-street, Waltham Abbey | Nov. 27 |
| Purifier House, &c. | Knaresborough U.D.C. | J. E. Walker, Surveyor, Town Hall, Knaresborough | Nov. 28 |
| Brick Culvert near Keresforth-road | Dodworth U.D.C. | G. Strutt, Surveyor, High-street, Dodworth | do. |
| *Erection of Mortuary, &c. | Greenwich Borough Council | A. Roberts, Architect, 18, Nelson-street, Greenwich, S.E. | Nov. 30 |
| *Retaining Wall along Shore-road | Swanage U.D.C. | Council's Surveyor, Town Hall, Swanage | do. |
| *200 feet 21-in. Sewer, &c. | Borough of Hornsey | Boro' Eng. and Surv., Municipal Offices, Southwood-lane, Highgate | do. |
| *New Warehouse on Pier, Plymouth | G.W.R. Co. | Engineer, North-road Station, Plymouth | Dec. |
| *Paving Circus-place, Portion of Finsbury-circus, &c. | Corporation of London | Engineer to the Corporation, Public Health Department, Guildhall | do. |
| *Alterations to Hot-Water Supply, N. E. Hospital | Metropolitan Asylums Board | Office of the Board, Embankment, E.C. | do. |
| *Library Buildings, Cubitt Town | Poplar Borough Council | C. H. Norton, Architect, 14, Bedford-row, W.C. | Dec. 3 |
| Hospital, &c. | Birkdale (Lancs) U.D.C. | J. T. Keeley, Town Hall, Birkdale | Dec. 4 |
| *Internal Fittings, New University Buildings | Birmingham University | Aston Webb & Ingress Bell, 19, Queen Anne's-gate, S.W. | Dec. 14 |
| Stone Wall, Bowerham | Lancaster Corporation | J. C. Mount, Borough Surveyor, Town Hall, Lancaster | No date. |
| Water Supply Works, North Lodge-road, Parkstone | Poole Town Council | John Elford, Poole | do. |
| House and Shop, Horden Colliery, Durham | ..... | W. A. Noble, Castle Eden Colliery, Castle Eden, R.S.O. | do. |
| Farmhouse, Carrington Estate, Humberstone, Lincs | ..... | J. C. Jonas & Sons, Cambridge | do. |
| *Timber Pavilion | Weston Super Mare Grand Pier Co. | Mayoh & Haley, 12, Norfolk-street, Strand, W.C. | do. |
| *Nautical School, Portishead | Training Ship "Formidable" | E. Gabriel, Architect, 42, Old Broad-street, E.C. | do. |

## PUBLIC APPOINTMENTS.

| Nature of Appointment. | By whom Advertised. | Salary. | Applications to be in |
|---|---|---|---|
| *Clerk of Works | Borough of Portsmouth Edn. Comm. | 5l. 5s. per week | Nov. 23 |
| *Chair of Architecture | Liverpool University | See advertisement | Dec. 31 |

*Those marked with an asterisk (*) are advertised in this Number.* *Competition*, xxii. *Contracts*, iv. vi. viii. & x. *Public Appointments*, xix.

TENDERS (*Continued*):—

**BASFORD (Notts).**—For the execution of sewerage works, Gedling and Colwick, for the Basford Rural District Council. Messrs. Elliott & Brown, Engineers, Burton Buildings, Parliament-street, Nottingham:—

| | Colwick. | Gedling. |
|---|---|---|
| Cope & Raynor | £12,276 17 0 | £6,185 13 0 |
| Firth & Co. | 11,570 17 0 | 6,052 7 0 |
| Johnson & Langley | 7,816 1 2 | 7,429 16 0 |
| A. Ashley | 7,534 12 0 | 5,829 15 0 |
| A. Jewell | 7,286 8 0 | 5,392 18 0 |
| H. H. Barry | 7,250 0 0 | 5,450 0 0 |
| J. S. Dawson | 7,193 17 0 | 5,631 5 9 |
| Bower Bros., West Bridgford, Notts | 6,900 0 0 | *5,050 0 0 |
| Bentley & Lock, Leicester | *6,631 10 7 | 6,095 0 0 |
| T. H. Harper | — | 5,525 0 0 |
| G. M. Kerry | — | 6,900 0 0 |

**BATLEY (Yorks).**—For the execution of street works, North Bank-road, Surliwell-Hall-road, and Yard No. 9, for the Town Council. Mr. O. J. Kirby, Surveyor, Branch-road, Batley:—

| | | | |
|---|---|---|---|
| Whitehead & Son | £1,277 12 0 | Mathew Hall | £1,048 19 6 |
| W. Yates | 1,227 14 7 | Coop & Son | 1,034 11 3 |
| Graham & Sons | 1,192 13 3 | H. Parkinson, Soothill* ‡ | 1,028 6 4 |
| Speight & Co. | 1,156 12 0 | H. & W. Barraclough | 1,009 18 7 |
| C. Waterhouse | 1,155 19 8 | Kenyon Bros., Halifax* § | 894 5 4 |
| Garforth Bros. | 1,141 11 0 | | |
| F. Crabtree | 1,061 0 11 | | |
| G. & J. Mortimer | 1,060 7 4 | | |

‡ Yard No. 9. § For streets.

**BATLEY (Yorks).**—For the erection of boundary-wall at sewage outfall works, Bradford-road, for the Town Council. Mr. O. J. Kirby, Surveyor, Batley:—

| | | | |
|---|---|---|---|
| J. Crossley, jun. | £676 19 0 | T. Mortimer | £475 2 0 |
| Whitehead & Son | 668 12 0 | Pickles | 473 19 0 |
| Chadwick & Sons | 605 13 6 | Humphries & Green | 456 17 2 |
| Ben Farrar | 530 0 0 | Coop & Son | 425 9 3 |
| Ackroyd & Son | 529 4 0 | G. & J. Mortimer, Batley* | 421 2 6 |
| Baines & Son | 527 14 0 | | |
| G. F. Hepworth | 487 8 6 | | |

**BATLEY (Yorks).**—For the erection of an approach tower to Independent Methodist Chapel, Cambridge-street, for the Corporation. Mr. O. J. Kirby, Borough Surveyor, Branch-road, Batley:—

| | | | |
|---|---|---|---|
| G. Whitehead | £380 0 0 | Chadwicke Bros. | £273 8 6 |
| Garforth & Day | 370 0 0 | B. Farrar | 261 0 0 |
| Graham & Sons | 342 0 0 | G. F. Hepworth | 240 0 0 |
| S. S. Baines | 328 14 0 | G. & J. Mortimer, Carlinghow* | 197 10 0 |
| Humphreys & Green | 298 18 7 | | |

**BRISTOL.**—For the Central Library for the Corporation of Bristol. Mr. H Percy Adams, architect, 28, Woburn-place, Russell-square, W.C.:—

| | | | |
|---|---|---|---|
| Longley & Co. | £34,979 | Cowlin & Son | £30,894 |
| R. F. Ridd | 31,985 | R. Wilkins | 30,676 |
| A. J. Beavan | 31,900 | Walters & Son | 30,470 |
| Kerridge & Shaw | 31,817 | H. Wilcox* | 29,765 |
| Stephens & Bastow | 31,688 | | |

[Architect's estimate £30,000]

**CARDIFF.**—For the erection of schools, &c., Llanishen-street, The Heath, for 1,200 children, with boundary-walls, latrines, playsheds, and caretaker's house, for the Cardiff School Board. Messrs. Veall & Sant, architects, Cardiff. Quantities by the architects:—

| | | | |
|---|---|---|---|
| Shepton & Son | £18,623 | C. C. Dunn | £15,600 |
| David Davies | 18,239 | Symonds & Co. | 15,411 |
| Thomas & Co. | 16,417 | Knox & Wells | 15,400 |
| Evans & Bros. | 16,277 | W. T. Morgan | 15,050 |
| Jas. Allan | 15,724 | Lattey & Co., Ltd.‡ | 14,832 |

[All of Cardiff.]

‡ Accepted subject to approval by Board of Education.

**EASTBOURNE.**—For buildings covering refuse destructor, Roselands, for the Corporation. Mr. D. J. Bowe, Borough Surveyor, Town Hall, Eastbourne:—

| | | | |
|---|---|---|---|
| Cook & Sons | £1,531 | M. Hookham, Eastbourne* | £1,178 |
| J. Martin | 1,475 | | |

**FRASERBURGH (N.B.).**—For the erection of a manse, King Edward-street, for the West U.F. Church. Mr. Wm. S. F. Wilson, architect, Frithside-street, Fraserburgh. Quantities by the architect:—

| | | |
|---|---|---|
| *Masonry.*—Jas. Rollo, Fraserburgh* | £509 0 0 | |
| *Carpentry.*—Scott & McDonald, Fraserburgh* | 371 10 0 | |
| *Slating.*—W. & J. Morrison, Fraserburgh* | 51 1 0 | |
| *Plumbing.*—Wm. Leask, Alford* | 105 0 0 | |
| *Plastering.*—Alex Campbell, Fraserburgh* | 75 0 0 | |
| *Painting.*—Wm. Stuart, Fraserburgh* | 38 18 6 | |
| Total | £1,150 9 6 | |

**GALWAY.**—For the execution of water-supply works, for the Urban District Council. Mr. James Perry, C.E., County Surveyor's Office, Galway:—

| | | |
|---|---|---|
| Cochrane & Co., Ltd., Middlesbrough* | £3,183 11 7 | Div. I., 600 tons pipes, &c. |
| Robert Macdonald, Galway* | 1,523 12 0 | Div. II., pipe-laying. |
| McKee & McNally, Dungannon* | 4,163 18 5 | Div. III., reservoir, water-courses, pump-house, &c. |

**GRIMSBY.**—For subway under Great Central Railway at East Marsh-street. Mr. H. Gilbert Whyatt, Borough Engineer and Surveyor:—

| | With Steps. | Additional for Slopes |
|---|---|---|
| T. R. Waterman | £1,524 2 6 | £801 0 0 |
| Watling | 1400 0 0 | 950 0 0 |
| Hewins & Goodhand | 1,282 11 0 | 632 19 6 |
| W. Burkitt, 7, Brecon-street, Buckingham street, Holderness-road, Hull* | 983 10 4 | 526 11 8 |

*For Asphalting Footpath, Lambert-road.*

| | | |
|---|---|---|
| Watling | £78 0 0 | |
| J. Guy | 75 7 5 | |
| E. R. White | 61 10 1 | |
| Burkitt | 56 10 7 | |
| Cook | 2 4 | per sq. yd. |
| Parry & Son, Kirton-in-Lindsey, Lincolnshire* | 52 16 4 | |

**HEREFORD.**—For post office extension, for H.M. Office of Works. Mr. W. T. Oldrieve, architect. Quantities by Messrs. Doubleday & Shaw, Birmingham:—
Bowers & Co., Bath-street, Hereford..... £1,840

**HOUNSLOW.**—For the erection of the first block of six shops and flats over, in High-street, Hounslow. Quantities supplied. Mr. W. A. Davies, architect, Town Hall Chambers, Hounslow:—

| | | | |
|---|---|---|---|
| J. Macklin | £9,999 | Leslie & Co. | £8,147 |
| Jones Bros. | 8,742 | Sheffield Bros. | 8,100 |
| T. Hiscock | 8,618 | Ferguson & Co. | 8,045 |
| C. Emmett | 8,550 | E. Plaistow | 7,859 |
| Wisdom Bros. | 8,300 | W. Irwin, Islington | 7,455 |
| A. & B. Hanson | 8,194 | | |

**ILFORD.**—For the erection of depôt buildings, stabling, &c., Ley-street, for the Urban District Council. Mr. H. Shaw, C.E., Ilford:—
F. Willmott, Town Hall, Ilford* ..... £9,320

**ILFRACOMBE.**—For the execution of road works for the District Council. Mr. Prouse, Engineer, Town Hall, Ilfracombe. Quantities by Engineer:—
J. Alderman, Kentisbury, near Barnstaple... £570

**KEIGHLEY.**—For paving works, Industrial and Hive streets, for the Corporation. Mr. W. H. Hopkinson, C.E., Town Hall, Keighley:—
T. E. Sugden, Midland Works, Keighley* £471 18 3

**LINCOLN.**—For additions to County Hospital (operating rooms). Messrs. W. Watkins & Son, architects, Silver-street, Lincoln. Quantities by architects:—

| | | | |
|---|---|---|---|
| Bowman & Sons | £780 0 0 | The Lincoln Co-operative Society, Lincoln* | £643 0 0 |
| S. & R. Horton | 777 0 0 | | |
| Fred. Messom | 765 0 0 | | |
| W. & M. Halkes | 759 12 6 | | |

**LONDON.**—For the formation of a new road, off Weston-road, Fairlawn Estate, Acton Green, W. Messrs. Monson & Sons, architects, Grosvenor House, Acton Vale, W.:—

| | | | |
|---|---|---|---|
| Bull & Co. | £1,617 5 0 | W. H. Wheeler | £952 10 0 |
| Kavanagh & Co. | 1,166 0 0 | Nowell & Co. | 952 0 0 |
| Wimpey & Co. | 1,163 0 0 | A. C. Soan | 940 0 0 |
| Woodham & Sons | 1,071 10 0 | Killingback & Co. | 921 0 0 |
| Thos. Watson | 1,058 2 7 | R. W. Swaker | 914 10 0 |
| R. Ballard | 972 0 0 | H. Morecroft, Acton Green* | 793 0 0 |

**LONDON, N.**—For kerbing works, &c., Winchmore Hill, for the Southgate Urban District Council. Mr. C. G. Lawson, C.E., Council Offices, Palmer's Green, N.:—

| | | | |
|---|---|---|---|
| Dunmore & Grounds | £1,798 12 1 | Ketteringham, Waltham Cross | £1,574 0 0 |
| Newton | 1,712 8 2 | Griffiths & Co. | 1,501 16 5 |
| Adams | 1,688 0 6 | Bloomfield | 1,436 19 9 |

**LONDON.**—For shops and residential flats, Uxbridge-road. Messrs. Palgrave & Co., architects, Victoria Mansions, 23, Victoria-street, S.W. Quantities by Mr. G. Stephenson, 14, Queen Victoria-street:—

| | Bath Stone. | Terra Cotta. |
|---|---|---|
| J. W. Dean | £21,000 | £21,000 |
| Kellett & Sons, Ltd. | 20,025 | 19,730 |
| Chessum & Sons | 19,625 | 19,635 |
| Ferguson & Co. (too late) | 18,978 | 18,823 |
| Leslie & Co. | 18,851 | 18,861 |
| H. L. Holloway | 18,763 | 18,823 |

**PONTYPRIDD.**—For the construction of a road, viaduct, and bridge, for the Urban District Council. Mr. R. P. Wilson, engineer, 68, Victoria-street, S.W.:—

| | | | |
|---|---|---|---|
| Heenan & Froude | £16,831 | J. E. Evans | £14,550 |
| A. Thorn‡ | 16,638 | A. Seaton | 12,810 |
| Hughes & Stirling | 15,334 | Bott & Stennett Westminster* | 12,367 |
| E. Finch | 15,190 | Westwood & Co.§ | 5,831 |
| Clark & Co. | 14,679 | | |

‡ Incomplete. § For steelwork only.

**PORTSMOUTH.**—For the erection of a pumping station, Eastney, for the Town Council:—

*Pumping Station, &c.*

W. W. Evans, Southsea* ..... £8,999 11 10

*High Level Relief Sewer.*

G. Bell, Tottenham* ..... £37,988 0 0

**PUDSEY (Yorks).**—For the erection of a pair of semi-detached houses, Bankhouse-lane, for Mr. W. H. Banks. Mr. C. S. Nelson, architect, 15, Park-row, Leeds:—

*Masonry.*—T. Wood, Pudsey* .....
*Joinery.*—R. Farrer, Pudsey* .....
*Plumbing.*—J. Scarth, Pudsey* ..... } Total, £197
*Plastering.*—A. Wood, Pudsey* .....
*Slating.*—F. Thompson, Stanningley* .....
*Painting.*—Armitage & Dower, Pudsey* ...

[The proprietor finding a portion of the stone.]

**ST. CLEER.**—For the restoration of St. Cleer Church Cornwall. Mr. Geo. H. Fellowes Prynne, architect, 6, Queen Anne's Gate, Westminster. Quantities by Mr. R. Henry Hale, F.S.I., 33, Old Queen-street, Westminster, S.W.:—

| | | | |
|---|---|---|---|
| Dart & Framers | £1,345 0 0 | J. C. Lang | £1,121 16 4 |
| G. Miners | 1,239 19 3 | S. Treherne, Liskeard* | 1,008 5 0 |
| N. W. Willen | 1,170 17 6 | | |
| G. B. Andrews | 1,133 17 1 | | |

**STOCKPORT.**—For the execution of street works within the borough (viz., Greg-street and Whitehill-street), for the Corporation. Mr. John Atkinson, C.E., Borough Surveyor, Stockport:—

| | | | |
|---|---|---|---|
| P. D. Hayes | £8,745 1 11 | W. H. Eva | £8,111 16 2 |
| Gosling & Stafford | 8,305 17 2 | W. H. Worthington, Manchester* | 8,072 18 2 |

## LONDON SCHOOL BOARD TENDERS.

At the last meeting of the London School Board the Works Committee submitted the following list of tenders:—

"CHAUCER" SCHOOL (Tabard-street, Borough).—For forming new passageway, rebuilding Infants' offices, &c.

| | | | |
|---|---|---|---|
| W. Downs | £1,875 0 | Rice & Sons | £1,651 0 |
| Falkner & Sons | 1,868 0 | J. & C. Bowyer | 1,642 0 |
| J. Peattie | 1,824 0 | Maxwell Bros., Ltd. | 1,633 0 |
| R. B. Beattie | 1,807 12 | Johnson & Co. | 1,623 0 |
| G. Parker | 1,774 0 | Lathey Bros. | 1,568 0 |
| W. V. Goad | 1,695 0 | Mitchell & Sons* | 1,374 0 |

LONDON SCHOOL BOARD.—Running Contracts for the Supply of Timber for Carving Cases:—

| | Cobbett's. | Garrard, R., & Co. | Harris, J. F. & G. | Ingram, Perkins & Co. | Latham, James, Ltd. | London School Furniture Co. | Mallinson, W. & Co.* | Putney, S. | Stewart, J. | Precious Pr.ces. | Approximate Annual Consumption. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Yellow pine (in 8 ft. lengths), planed one side only: | per ft. | d. | d. | d. | d. | d. | d. | d. | d. | d. | ft. |
| 1 in. | super. | 5½ | 6 | 6 | 6½ | 5½ | 5 | 6½ | 5 | 4 | 3,000 |
| ¾ in. | ,, | 4½ | 5 | 4½ | 5½ | 5 | 4½ | 4 | 5 | 4 | 1,500 |
| Bass or American whitewood (good green colour), planed one side only: | | | | | | | | | | | |
| 1 in. | ,, | 4 | 4 | 3½ | 3½ | 4½ | 4½ | 4½ | 4½ | 3½ | 650 |
| ¾ in. | ,, | 3½ | 3½ | 3 | 3½ | 4½ | 3½ | 3½ | 4½ | 3 | 750 |
| Oak (not less than 6 in. wide), planed one side only: | | | | | | | | | | | |
| 1 in. | ,, | 4½ | 6 | 7½ | 4½ | 4½ | 4½ | 4½ | 9 | 5 | 500 |
| ¾ in. | ,, | 4½ | 5 | 6 | 3½ | 4 | 4 | 3½ | 7½ | 4 | 500 |
| American walnut (not less than 9 in. wide), planed one side only): | | | | | | | | | | | |
| 1 in. | ,, | 10 | 8 | 11 | 8½ | 9 | 10 | 10 | 11 | 9½ | 9 | 450 |
| ¾ in. | ,, | 9½ | 7 | 9 | 7 | 8 | 9½ | 8½ | 10 | 7½ | 7½ | 500 |
| Satin walnut (not less than 8 in. wide), planed one side only: | | | | | | | | | | | |
| 1 in. | ,, | 4 | 4 | 6 | 3 | 3½ | 3½ | 4 | 5 | 3½ | 3½ | 450 |
| ¾ in. | ,, | 3½ | 3½ | 4½ | 2½ | 3½ | 3½ | 3½ | 4½ | 3½ | 3 | 450 |

[See also next page.

"EARLSFIELD" SITE, Wandsworth. (a) Removal of one iron building to "Beaufort House" Site—(b) Adaptation of two remaining iron buildings for special schools.

The Committee reported that they have arranged that one of these iron buildings shall be removed to the "Beaufort House" Site, Fulham, for the purpose of providing temporary accommodation for mentally defective children; and, as a matter of emergency, they have given instructions to Messrs. Stimpson & Co., Contractors, for the new permanent school on this site, to carry out this work (the cost of which is estimated at £500), as an addition to their contract. The Committee also have to report that they have made arrangements for adapting the two remaining iron buildings on the "Earlsfield" Site for the purposes of providing temporary accommodation for physically and mentally defective children. They have accordingly given instructions to Messrs. Johnson & Co., the Contractors for the new school, to carry out this work (the cost of which, including the provision of temporary offices, drainage, fencing, &c., is estimated at £250) as an addition to their contract.

ESSENDINE-ROAD SCHOOL (Maida Hill).—For enlargement. Enlargement—Boys', 130; girls', 130; infants', 145; total, 405. New classrooms: Boys' and girls'—50, 40, 40; infants'—55, 45, 45. Providing new staircase for boys', additional cloakrooms, lavatories, head teachers' rooms, and extending corridor for each department; also additional entrance for infants':—

| | | | |
|---|---|---|---|
| Williams & Son | £6,970 | Rice & Son | £6,549 |
| C. F. Kearley | 6,852 | McCormick & Sons | 6,424 |
| Simpson & Son | 6,804 | Patman & Fotheringham, Ltd. | 6,283 |
| Johnson & Co. | 6,763 | Stevens Bros. | 6,256 |
| Marchant & Hirst | 6,729 | Treasure & Son | 6,127 |
| Wall & Co. | 6,657 | General Builders, Ltd.* | 6,07[illegible] |
| Dabbs & Son | 6,642 | | |
| G. Neal | 6,595 | | |

GOODRICH-ROAD SCHOOL (East Dulwich.)—Erection of an additional classroom for special school.

T. D. Leng ..... £385

MINA-ROAD SCHOOL (Old Kent-road).—For erection of Higher Grade School and improvement of existing Graded School.

(i.) Improvements to Graded School—Boys'—Re-dividing, re-stepping, and re-lighting four central classrooms; Girls'—Re-dividing, re-stepping, and re-lighting four central classrooms, forming corridor across boys' hall for access to classrooms; adapting drawing classroom for hall: Infants'—Re-dividing, re-stepping, and re-lighting four central classrooms. Revised accommodation: Boys', 296; girls', 296; infants', 362; total, 954. Loss of 444 places.

(ii.) Higher Grade School on two stories—Accommodation: Boys', 260; girls, 260; total, 520. Halls: Boys', 50 ft. by 25 ft.; girls', 50 ft. by 25 ft. Classrooms: Boys', 50, 50, 40, 40, 40, 40; girls', 50, 50, 40, 40, 40, 40. Special rooms: Drawing classroom, 615 ft. area; Science room, 615 ft. area. Manual centre on arches for 40 boys. Heating by low-pressure hot-water apparatus. Area of site of additional land, 26,545 square feet. Playgrounds, area per child: Boys', 31 ft.; girls', 31 ft.:—

| | | | |
|---|---|---|---|
| Grover & Son | £18,354 | J. Carmichael | £17,439 |
| Martin, Wells & Co., Ltd. | 18,100 | J. & M. Patrick | 17,304 |
| Marsland & Sons | 18,017 | Treasure & Son | 17,048 |
| Greenwood, Ltd. | 17,985 | L. H. & R. Roberts | 16,998 |
| Johnson & Co. | 17,953 | Garrett & Son | 16,977 |
| King & Son | 17,900 | Thomas & Edge | 16,328 |
| Clarke & Bracey | 17,852 | Smith & Son | 16,058 |
| Lawrance & Sons | 17,562 | Mitchell & Son | 16,020 |
| Lathey Bros. | 17,519 | F. & H. F. Higgs | 15,917 |
| Stimpson & Co. | 17,490 | W. Downs* | 15,739 |

POWIS STREET SCHOOL (Woolwich).—For adaptation of premises for Centres for Physically and Mentally Defective and Blind Children.

Old Infants' School—Adapting building for Physically Defective Children; three classrooms (one for use as dining-room as required), hall, kitchen, entrance porch, &c. Graded School—Adapting this School as follows:—Ground floor—Centre for Mentally defective children; three classrooms, hall, &c. First floor—Centre for Blind: two classrooms and hall. Also providing Teachers' room, new staircases, cloak-rooms, lavatories, additional offices, re-dividing playgrounds, providing additional entrances, &c., in connection therewith.

| | | | |
|---|---|---|---|
| Smith & Sons, Ltd. | £4,210 | Holiday & Greenwood, Ltd. | £3,915 |
| Proctor & Son | 4,170 | T. D. Leng | 3,778 |
| Johnson & Co. | 4,099 | E. Trigge | 3,671 |
| Mitchell & Son | 4,087 | Thomas & Edge | 3,628 |
| J. & C. Boyer | 3,986 | H. Groves | 3,592 |
| Lathey Bros. | 3,930 | Bulled & Co.* | 3,477 |

SELLINCOURT-ROAD SITE (Mellison-road, Tooting Graveney. For re-erecting two iron buildings to be removed from West Hill site, Wandsworth:—

| | | | |
|---|---|---|---|
| T. Cruwys | £1,190 | Humphreys, Ltd. | £997 |
| A. Leather | 1,183 | J. McManus | 985 |
| F. Smith & Co. | 1,024 | Croggan & Co. | 980 |
| T. J. Hawkins & Co. | 999 | W. Harbrow | 940 |
| Mitson & Harrison* | £808. | | |


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London Agent:—Mr. E. A. Williams, 16, Craven-street, Strand.

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